Avaya™ P330 Manager User Guide

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Avaya™ P330 Manager User Guide

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Preface

Welcome to Cajun P330 Manager. This chapter provides an introduction to the structure and assumptions of this guide. It includes the following sections:

- **The Purpose of this Guide** - A description of the goals of this guide.
- **Who Should Use this Guide** - The intended audience of this guide.
- **Who Should Use this Guide** - A brief description of the subjects contained in the various sections of this guide.

The Purpose of this Guide

The Cajun P330 Manager guide contains information needed to use the management system efficiently and effectively.

Who Should Use this Guide

This guide is intended for network managers familiar with network management and its fundamental concepts.

Organization of this Guide

This guide is structured to reflect the following conceptual divisions:

- **Cajun P330 Manager** - Information pertaining to the entire Cajun P330 Manager application and all of its aspects.
  - **Preface** - This section describes the guide's purpose, intended audience and organization.
  - **Introduction** - An introduction to the Cajun P330 Manager including instructions on starting the Cajun P330 Manager.

- **Cajun P330 Device Manager** - Information pertaining to Cajun P330 Device management.
  - **Device Manager** - An introduction to the Cajun P330 Device Manager including a description of the user interface.
  - **Device Configuration** - Viewing and modifying the different device configurations.
  - **Power Over Ethernet** - An overview of Power over Ethernet (PoE) and instructions on viewing and configuring PoE parameters.
  - **G700 Media Gateway** - An overview of the G700 Media Gateway and information on viewing and configuring G700 components.
  - **VoIP Engine Configuration** - An overview of VoIP Engine functionality and information on viewing and configuring VoIP Engine parameters.
  - **Port RMON** - Viewing graphical representations of the traffic on the ports of the Cajun P330 Device.
  - **VLANs** - Viewing and editing VLAN information.
  - **Link Aggregation Groups (LAGs)** - Viewing and editing LAG information.
  - **Port Redundancy** - Configuring port redundancy for ports and LAGs in a Cajun P330 Device.
  - **Port Mirroring** - Setting up port mirroring for ports and LAGs in a Cajun P330 Device.
  - **Trap Managers Configuration** - Viewing and modifying the Trap Managers table.
  - **Switch Connected Addresses** - Viewing devices connected to selected ports.
  - **Port Security** - Viewing and modifying port security settings.
  - **LEC Information** - Viewing LECs attached to a selected ATM Uplink expansion module.
- **Cajun P330 Routing Manager** - Information pertaining to Cajun P330 routing management.
  - **Routing Manager** - An introduction to configuring routing with Cajun P330R modules, and a description of the Cajun P330R Routing Manager user interface.

  - — **Device** - Detailed descriptions of routing device configuration that enable you to display and modify global parameters, reset the module, and upload or download configuration parameters.
  - — **Layer 2** - Detailed descriptions of layer 2 configuration that enable you to view layer 2 interfaces at the management station.
  - — **IP Route** - Detailed descriptions of IP route configuration that enable you to display and update IP interfaces, the IP routing table, the ARP table, DHCP/BOOTP parameters, RIP interfaces, OSPF interfaces, area parameters, link-state database and neighbors, the IP access control table, and redundancy parameters.
  - — **EZ2route** - Detailed descriptions of EZ2Route configuration that enable you to display and update the learning mode of EZ2Route modules and the routers that they have learned.

- **Appendices** - Additional information about the Cajun P330 Manager.
  - — **Menus** - The full structure of the menus in the Cajun P330 Manager.
  - — **Web Management** - Instructions on how to manage Cajun P330 Devices via the Internet.
  - — **Configuration Fields** - All fields referenced in the modules and their descriptions.
  - — **Traffic Types** - A description of the types of traffic that can be viewed using Port RMON.
  - — **Trap Fields** - A description of the traps that can be sent to the managers of the Cajun P330 Device.

1 Introduction

This chapter provides an introduction to the Cajun P330 Manager. It includes the following sections:

- **Cajun P330 Manager Overview** - An overview explaining the different aspects of Cajun P330 Device management.
- **Starting Cajun P330 Manager** - Instructions on how to access Cajun P330 Manager from your management platform.
- **The User Interface** - Detailed descriptions of the user interface common to all applications in the Cajun P330 Manager.
- **Managing Tables** - An explanation of the symbols used to label table rows.

Cajun P330 Manager Overview

The Cajun P330 Manager provides full management capabilities for Cajun P330 Devices. This includes the ability to view four aspects of device management:

- **Device Manager** - Provides a view of the configuration of the device including VLAN configuration, configured LAGs, port mirroring, and traps. For information specific to the Cajun P330 Device Manager, refer to chapters 2-16.
- **Routing Manager** - Provides a view of the third layer routing and forwarding functions of the device. For information specific to the Cajun P330 Routing Manager, refer to chapters 17-21.
- **Device SMON** - Provides advanced monitoring capabilities for the device. For information specific to Cajun P330 Device SMON, refer to *Cajun P330 Device SMON User Guide*.
- **AnyLayer SMON** - Provides advanced monitoring capabilities for Cajun P333R modules in the device. For information specific to Cajun P330 AnyLayer SMON, refer to *Cajun P330 Device SMON User Guide*.

For information on switching between the different views, refer to “Application Tabs” on page 6.

Starting the Cajun P330 Manager

This section provides instructions for starting Cajun P330 Manager.

Cajun P330 Manager as Part of CajunView

If you installed the Cajun P330 Manager as part of the CajunView Suite, the following sections provide instructions for starting Cajun P330 Manager.

Running Cajun P330 Manager from CajunView Console

From the management platform map:

1. Double-click the label representing the Cajun P330 Device you want to manage.

Or

1. Select the label representing the Cajun P330 Device you want to manage.
2. Select **Tools > Device Manager**.

Running Cajun P330 Manager from HP-OV for Windows

From the management platform map:

1. Double-click the icon representing the Cajun P330 Device you want to manage.

Or

1. Select a Cajun P330 Device.
2. Select **Avaya > Device Manager**.

Running Cajun P330 Manager from HP NNM

*** Note:** This applies to Solaris and Windows NT.

From the management platform map:

1. Select the Cajun P330 Device you want to manage.
2. Click in the OpenView toolbar.

   Or

   Select **Tools > Avaya > Device Manager.**

Or

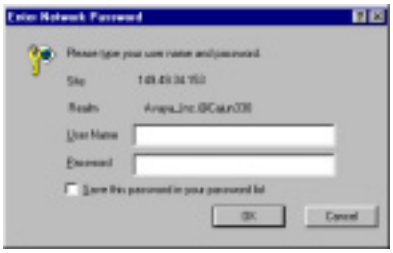
1. Right-click on the Cajun P330 Device you want to manage.
2. Select **Avaya > Device Manager**.

Cajun P330 Manager via Web Management

To start Cajun P330 Web Management:

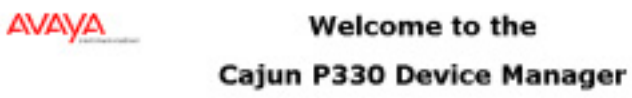
1. Point your web browser to **`http://`***`xxx.xxx.xxx.xxx`*, where *xxx.xxx.xxx.xxx* is the IP address of the Cajun P330 Device you want to manage. The Password dialog box opens.

Figure 1-1. Network Password Dialog Box



2. Enter **`root`** in the User Name field and the correct password in the Password field (Passwords valid for the CLI are also valid).
3. To save the password on your computer, check the Save this password in your password list checkbox.
4. Click **OK**. The Cajun P330 Welcome page opens.

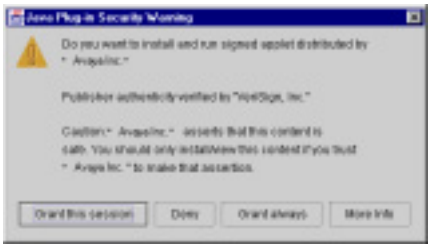
Figure 1-2. Cajun P330 Welcome Page



— If the required Java plug-in is installed on your computer, the Java Plug-in Security Warning dialog box opens after a few seconds.

— If the required Java plug-in is not installed, the plug-in is automatically downloaded to your computer. Follow the instructions on the Cajun P330 Welcome page to install the plug-in.

Figure 1-3. Java Plug-in Security Warning



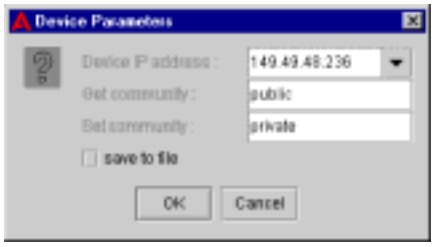
5. Click **Grant this session** or **Grant always**. The Cajun P330 Manager opens in a separate browser window.

Cajun P330 Manager as a Standalone Management Application

If you have installed Cajun P330 Manager as a standalone management application, the following are instructions for starting Cajun P330 Manager:

1. Double-click on the Cajun P330 Manager icon. The Device Parameters dialog box opens.

Figure 1-4. Device Parameters



2. Enter the IP address of the Cajun P330 Device you want to manage in the Device IP address field.
3. Enter the read community name in the Get community field.
4. Enter the write community name in the Set community field.
5. To save the parameters, check the save to file checkbox. Saved configurations will appear in the Device IP address pull-down list.
6. Click **OK**. The Cajun P330 Manager application opens.

Managing Different Devices

To manage a different device:

1. From the Cajun P330 Device Manager, select **File > Change IP**. The Device Parameters dialog box opens (Figure 1-4).
2. Follow the instructions above to select a different Cajun P330 Device to manage.

*** Note:** This feature is only available if you have installed the Cajun P330 Manager as a standalone management application.

The User Interface

The Cajun P330 Manager user interface is different for each of its management applications. However, the following elements of the user interface are common to all views:

- **Application Tabs** - Tabs for accessing the Device Manager, Routing Manager, and SMON applications for the Cajun P330 Device.
- **Application Area** - An area where the selected application opens.
- **Status Line** - Displays the communication status between the Cajun P330 Manager and the Cajun P330 Device.

Figure 1-5. Cajun P330 Manager User Interface

Application Tabs

You can access the four main components of device management using the following Application Tabs in the Cajun P330 Manager:

- **Device Manager** - View the Cajun P330 Device Manager for device configuration and Port RMON.
- **Device SMON** - View SMON (Switch Monitoring) information for the Cajun P330 Device.
- **AnyLayer SMON** - View AnyLayer SMON information for Cajun P333R routing modules in the device.
- **Routing Manager** - View the Cajun P330 Routing configuration.

To switch to a different view, click on the appropriate Application Tab. The selected application opens.

*** Note:** When the Cajun P330 Manager is installed as a standalone manager and when running the Cajun P330 Manager via Web Management, the Device SMON and AnyLayer SMON tabs do not appear.

Status Line

The Status Line shows the communication status between the application and the Cajun P330 Device. The Status Line displays a status message and an appropriate graphic. The table below shows the possible statuses with their corresponding graphics, and provides an explanation for each status.

Table 1-1. Communication Statuses

Status	Graphic	Description
Ready		The application is ready to communicate with the Cajun P330 Device.
Communicating		The application is currently communicating with the Cajun P330 Device.
Communication Error		The last attempted communication with the Cajun P330 Device was not successful.

Managing Tables

The Cajun P330 Manager interface displays the status of each row in a table. The following table shows a list of symbols that can appear at the start of a table row, with their corresponding explanations.

Table 1-2. Table Symbols

Symbol	Explanation
	The row has not changed since the device was last updated.
	The row is a new entry.
	The row is to be deleted.
	The information in the row has been changed by the user.

To undo all the changes made to a table, click . To undo changes made to a selected row, click . When all changes are finalized, click to update the device.

2 Device Manager

This chapter provides an introduction to the Cajun P330 Device Manager. It includes the following sections:

- **The User Interface** - An introduction to the Cajun P330 Device Manager user interface, including instructions on selecting elements and using the toolbar buttons.
- **Cajun P330 Modes** - Instructions about switching between the configuration and Port RMON modes in the Cajun P330 Device Manager.
- **Using Dialog Boxes and Tables** - An explanation of the icons found in the dialog boxes and tables in the Cajun P330 Device Manager.
- **Using Cajun P330 Device Manager Help** - An explanation of the options for accessing on-line help in the Cajun P330 Device Manager.

The User Interface

The Cajun P330 Device Manager user interface consists of the following elements:

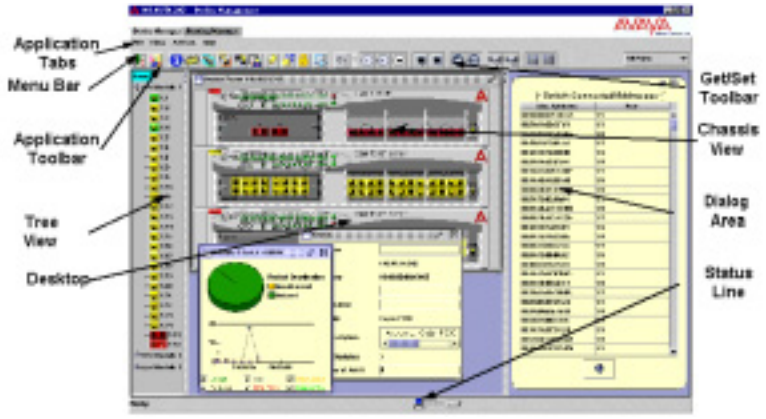
- **Menu Bar** - Menus for accessing Cajun P330 Device management functions.
- **Application Toolbar** - Toolbar buttons for accessing Cajun P330 Device management functions.
- **Get/Set Toolbar** - Toolbar buttons for viewing and changing the configuration of ports and LAGs.
- **Tree View** - A resizeable window containing a hierarchical representation of the modules and ports of the Cajun P330 Device.
- **Desktop** - A resizeable window where the Chassis View and all floating and minimized dialog boxes and tables are displayed.
- **Chassis View** - A graphical representation of the Cajun P330 Device.

- **Dialog Area** - A resizeable window where all dialog boxes and tables first open.

For information on other parts of the user interface, refer to "The User Interface" on page 6.

The figure below shows the user interface, with its various parts labeled.

Figure 2-1. The Cajun P330 Device Manager User Interface



To resize the three main areas of the user interface, the Tree View, the Chassis View, and the Dialog Area, use the splitter bars and their arrows.

Application Toolbar

The Application Toolbar provides shortcuts to the main Device Manager functions.

The table below describes the buttons on the Application Toolbar and gives the equivalent menu options.

Table 2-1. Application Toolbar

Button	Description	Menu Item
	Sets the device manager to Configuration Mode.	**View > Configuration**
	Sets the device manager to Port RMON mode.	**View > Port RMON**
	Displays the device information dialog box.	**Actions > Device Information**
	Displays the VLAN window.	**Actions > Virtual LANs**

Table 2-1. Application Toolbar (Continued)

Button	Description	Menu Item
	Displays the LAG table.	**Actions > Link Aggregation**
	Displays the Port Redundancy table.	**Actions > Port Redundancy**
	Starts the Port Mirroring wizard.	**Actions > Port Mirroring**
	Displays the IP Multicast Filtering dialog box.	**Actions > IP Multicast Filtering**
	Displays the Trap Manager Table.	**Actions > Trap Managers**
	Displays addresses of devices connected to the switch.	**Actions > Switch Connected Addresses**
	Displays the Port Security window.	**Actions > Security**
	Displays a list of LECs attached to an ATM Uplink expansion module.	**Actions > LEC Information**
	Opens the on-line help.	**Help > Contents**
	Selects a VLAN. Ports that are not on the selected VLAN appear dark gray in the Chassis View.	

When you place the cursor on a toolbar icon for one second, a label appears with the name of the button.

Get/Set Toolbar

The Get/Set Toolbar provides buttons for getting and setting configuration parameters for selected ports and LAGs. When a port or LAG is selected, its configuration is reflected on the Get/Set Toolbar. Each group of buttons represents the various possible states of a configuration parameter. For example, the first group of buttons represents the possible speed of a port - 10 Mbps, 100 Mbps, or 1000 Mbps. If the center button is depressed, the port is currently configured to operate at 100 Mbps.

Selected ports and LAGs can be configured using the Get/Set Toolbar. To change the configuration of a port or LAG, click the button which represents the value of the parameter you want to apply to the port or LAG. Click **apply** to update the device with the changes. Click **cancel** to discard the changes. Options not applicable to the selected port or LAG are dimmed.

To configure the ports of a LAG, select the LAG icon in the Tree View or the Chassis View. Ports belonging to a LAG may not be configured by selecting the port.

Multiple ports and LAGs can be simultaneously configured using the Get/Set Toolbar. When multiple ports or LAGs with nonidentical configurations are selected, only the parameters whose settings are identical on the selected ports or LAGs are reflected in the Get/Set Toolbar. For example, if a port operating at full duplex and a port operating at half duplex are selected, neither of the duplex mode buttons on the Get/Set Toolbar are depressed.

The table below displays the buttons on the Get/Set Toolbar and explains their functions and settings.

Table 2-2. Get/Set Toolbar

Button	Description
	Get and set the port/LAG's speed: 10 Mbps, 100 Mbps, 1000 Mbps.
	Get and set the port/LAG's status: Enabled, Disabled.
	Get and set the port/LAG's mode: Half duplex, Full duplex.
	Get and set the port/LAG's auto-negotiation status: Auto-negotiation Enabled, Auto-negotiation Disabled.
	Get and set the port/LAG's priority: Regular priority, High priority.
	Apply or cancel the configuration changes made with the Get/Set Toolbar.

Tree View

The Tree View shows a hierarchical representation of the structure of the Cajun P330 Device. To select ports, LAGS, modules or media modules, click on their icons in the Tree View. When an element is selected in the Tree View, the corresponding element is selected in the Chassis View.

The highest level of the Tree View represents the device. The second level shows modules. The third level shows ports and LAGs. This includes ports on expansion modules.

To expand the view of a contracted element in the tree or to contract the view of an expanded element in the tree:

Double-click the element.

Or

Click the handle next to the element you want to expand or contract.

Desktop

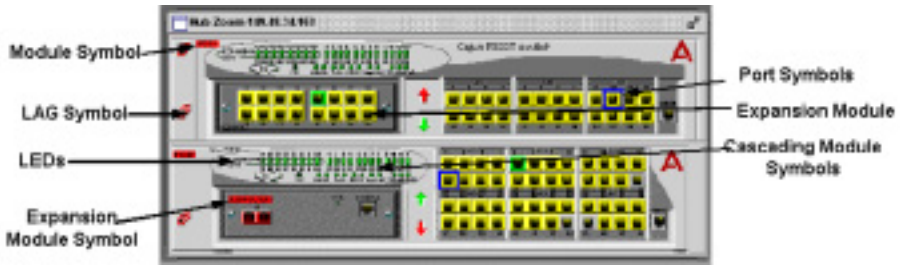
The central section of the application window is the Desktop. This area can be resized by dragging the vertical splitter bars with the mouse. Floating dialog boxes and tables can be resized. The Chassis View and floating dialog boxes and tables can also be minimized. Minimized windows appear at the bottom of the Desktop.

Chassis View

The Chassis View is a graphical representation of the Cajun P330 Device. The Cajun P330 Device can contain several Cajun P330 modules. The Chassis View shows all of the device's modules, LAGs, and ports, including ports on expansion modules and cascading modules (when present). The colors of the modules, LAGs, and ports in the Chassis View reflect their status.

When you hold the cursor over a port's icon in the Chassis View, a label appears with the port number, its VLAN ID, and the last fault that occurred on the port. When you hold the cursor over a LAG's icon in the Chassis View, a label appears with the name and VLAN number of the LAG, and the last fault that occurred on the LAG.

Figure 2-2. Cajun P330 Chassis View



When viewing selected tables, the color of the port or LAG indicates the status of the port or LAG with regard to the application. For example: When creating a Link Aggregation Group (LAG), ports that can be selected appear white in the Chassis View. The port selected to be the base port appears dark blue. The ports selected to be additional ports appear cyan.

The Cascading Module symbols show the status of the links between adjacent modules in the device. The Cascading Module symbols at the top and bottom of the device show the status of the long cable link between the top and bottom modules in the device. If there is no Cascading Module in the device, the Cascading Module symbols do not appear.

The following table provides a list of the possible port and LAG colors in the Chassis View and their meaning.

Table 2-3. Chassis View Port/LAG Colors

Color	Meaning
Green	The port/LAG is enabled, and its status is Okay.
Yellow	The port/LAG is enabled, and its status is Warning.
Red	The port/LAG is enabled, and its status is Fatal.
Light Gray	The port/LAG is disabled.
Dark Gray	The port/LAG is not associated with the selected VLAN.
White	The port/LAG is logically available for assignment.
Dark Blue	The port/LAG has been assigned the primary position in an application.
Cyan	The port/LAG has been assigned a secondary position in an application.

GBIC Ports

Some Cajun P330 expansion modules contain GBIC (GigaBit Interface Converter) ports that house removable transceiver modules. The Chassis View reflects the management status of the ports. The following table shows the possible appearances of these ports in the Chassis View and provides the corresponding management status of the port.

Table 2-4. GBIC Port Status

GBIC Port	Status
	The GBIC port contains a supported transceiver module.
	There is no transceiver module present in the GBIC port.
	The transceiver module in the GBIC port is not supported.
	The transceiver module in the GBIC port is of an unknown type.

GBIC ports that contain the following types of transceiver modules can be configured:

- Supported transceiver modules
- No transceiver modules
- Unknown transceiver modules

GBIC ports that contain unsupported transceiver modules cannot be configured.

Selecting Elements

You can select modules, LAGs, and ports.

To select a module:

In the Chassis View, click the module's label.

Or

In the Tree View, click the module's icon. The module's label is highlighted in the Chassis View and the Tree View.

To select a LAG:

In the Chassis View, click the LAG's icon.

Or

In the Tree View, click the LAG's icon. The LAG is highlighted in the Chassis View and the Tree View.

To select a port:

In the Chassis View, click the port.

Or

In the Tree View, click the port's icon. The port is highlighted in the Chassis View and the Tree View.

— To select multiple elements, press **CTRL** while clicking on each element to be selected.

Dialog Area

The area to the right of the Chassis View is where all dialog boxes, tables, and wizards first appear. This area can be resized by dragging the vertical splitter bar with the mouse. When a dialog box, table, or wizard opens, it replaces the current dialog box open in the Dialog Area. To view more than one dialog box or table simultaneously, click the pushpin in the upper right-hand corner of the dialog box. The dialog box becomes a floating dialog box and moves to the Desktop.

To restore a dialog box to the Dialog Area, click the toolbar button or icon that opened the dialog box. The dialog box returns to the Dialog Area.

Cajun P330 Modes

The Cajun P330 Device Manager has two modes:

- Configuration mode
- Port RMON mode

When in configuration mode, you can view and change the configuration of the Cajun P330 Device and individual ports. When in Port RMON mode, you can view graphical representations of the traffic on individual ports.

To switch to configuration mode:

Click .

Or

Select **View > Configuration**.

To switch to Port RMON mode:

Click .

Or

Select **View > Port RMON**.

Using Dialog Boxes and Tables

Dialog boxes and tables in the Cajun P330 Manager application have a common set of icons. The following table displays the icons and explains their functions:

Table 2-5. Dialog Box Icons

Icon	Function
	Refreshes the information in the table or dialog box. This clears any changes made to the table or dialog box and not yet sent to the device.
	Sends the information from the table or dialog box to update the device.
	Adds a row to the table.
	Starts a wizard.
	Deletes the selected rows of the table.
	Undoes all changes to the selected row in a table.

Using Cajun P330 Device Manager Help

This section explains how to use the on-line help in the Cajun P330 Device Manager. The on-line help can be opened to the contents page or directly to a topic of interest.

*** Note:** When running the Cajun P330 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the Cajun P330 Device with the location of the help files. For information on installing the on-line help and configuring the device with the location of the files, refer to the *Cajun P330 User's Guide*.

Opening the Help to the Contents Page

To open the help to the contents page, select **Help > Contents**. The on-line help opens to the contents page.

Opening the Help to a Topic of Interest

To open the help directly to a topic of interest:

1. Click . The cursor changes to the shape of an arrow with a question mark.
2. Click on a point of interest in the Cajun P330 Device Manager. The on-line help opens to a topic explaining the feature that was clicked.

3 Device Configuration

This chapter explains how to view and set the various configuration parameters relevant to the Cajun P330. It includes the following sections:

- **Viewing Device Information** - View high-level information about the Cajun P330 Device.
- **Viewing Module Configuration** - View information specific to a Cajun P330 module in the device.
- **Viewing LAG Configuration** - View information specific to a LAG on a Cajun P330 module in the device.
- **Viewing Port Configuration** - View information specific to the ports on the Cajun P330 Device.
- **Resetting the Device** - Reset the Cajun P330 Device.

To view configuration information, you must be in Configuration mode. To switch to Configuration mode:

Click .

Or

Select **View > Configuration**.

Viewing Device Information

The Device Information dialog box provides you with high-level information specific to the Cajun P330 Device. To view information about the Cajun P330 Device:

Click .

Or

Select **Actions > Device Information**. The Device Information dialog box opens.

Figure 3-1. Device Information Dialog Box

The Device Information dialog box provides detailed information about the device such as the device's name, addresses, contact person, location, type, description, the number of modules in the device, and the management VLAN ID.

For a full description of all fields in the Device Information dialog box, refer to Appendix C, *Configuration Fields*.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 17.

Viewing Module Configuration

The Module Configuration dialog box provides you with information specific to a selected module. To view the configuration of a module:

Click the module symbol in the Tree View.

Or

Click the module's label in the Chassis View. The Module Configuration dialog box opens.

Figure 3-2. Module Configuration Dialog Box

The Module Configuration dialog box provides detailed information about the module, such as the module's position in the device, the module's type, description, number of ports, mode of operation, and any faults occurring on the module. It also includes information about expansion, cascading, and BUPS (BackUp Power Supply) modules that are connected to the selected module.

In addition, the Power tab provides information about the module's Power over Ethernet (PoE) configuration. For more information, refer to Chapter 4, *Power Over Ethernet*.

If you have a G700 Media Gateway Module, the Module Configuration dialog box includes three additional tabs. For more information, refer to Chapter 5, *G700 Media Gateway*.

*** Note:** The information fields in the Module Configuration dialog box vary according to the type of module selected.

*** Note:** To view the configuration of an ATM Uplink expansion module, click on the expansion module symbol in the Chassis View.

For a full description of all configuration fields in the Module Configuration dialog box, refer to Appendix C, *Configuration Fields*.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

Viewing LAG Configuration

The LAG Configuration dialog box provides you with information specific to a selected LAG. To view the configuration of a LAG:

Click the LAG's symbol in the Tree View.

Or

Click the LAG's icon in the Chassis View. The LAG Configuration dialog box opens.

Figure 3-3. LAG Configuration Dialog Box

The LAG Configuration dialog box provides detailed information about the LAG, such as the LAG's status, name, VLAN tagging mode, VLAN ID, priority level, and mode of operation.

The Get/Set Toolbar provides an alternative, quick method to view and change a LAG's configuration. For more information on the Get/Set Toolbar, refer to "Get/Set Toolbar" on page 11.

For a full description of all configuration fields in the LAG Configuration dialog box, refer to Appendix C, *Configuration Fields*.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

Viewing Port Configuration

The Port Configuration dialog box contains tabs which provide you with information specific to a selected port.

Ethernet Ports

The Port Configuration dialog box provides detailed information about the port, such as the port name, type, functionality, status, VLAN ID, mode of operation, and any faults occurring on the port.

In addition, the Power tab provides information about the port’s PoE configuration. For more information about PoE, refer to Chapter 4, *Power Over Ethernet*.

The Get/Set Toolbar provides an alternative, quick method to view and change the port’s configuration. For more information on the Get/Set Toolbar, refer to “Get/Set Toolbar” on page 11.

*** Note:** The configuration of ports that participate in a LAG cannot be changed using the Port Configuration dialog box. Use the LAG Configuration dialog box instead.

*** Note:** The information fields in the Port Configuration dialog box vary according to the type of port selected.

To view the configuration of a port:

Click the port symbol in the Chassis View.

Or

Click the port's icon in the Tree View. The Port Configuration dialog box opens.

Figure 3-4. Port Configuration Dialog Box

For a full description of all configuration fields in the Port Configuration dialog box, refer to Appendix C, *Configuration Fields.*

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 17.

Resetting the Device

You can reset the entire Cajun P330 Device, or one or more of its individual modules.

To reset the entire Cajun P330 Device:

1. Select **Action > Reset Device**. A confirmation dialog box opens.
2. Click **Yes**. The device resets.

To reset an individual Cajun P330 module:

1. Click the label of the module you want to reset.
   - To select multiple modules, press **CTRL** while clicking additional module labels.
2. Select **Actions > Reset Module**. A confirmation dialog box opens.
3. Click **Yes**. The selected module resets.

4 Power Over Ethernet

This chapter provides information about Power over Ethernet (PoE) and includes the following sections:

- **PoE Overview** - An overview of Power over Ethernet functionality in Cajun P330 devices.
- **Viewing PoE Information** - Information about viewing PoE port information and configuring PoE on a module and port level.

PoE Overview

PoE provides power to IP telephones over an Ethernet line using a Cajun P330 device. The power is transmitted via the device's ports to the IP telephones over the same cable carrying IP packets.

The Cajun P330 device automatically discovers the connection and removal of IP telephones from the inline powered ports and provides power accordingly.

The Cajun P330 provides the power using an internal 225 watt power supply over a 48 volt feed. It is possible to attach an external power supply either for additional power, or as an alternative power supply should the internal power supply fail.

In addition, you can configure power priorities per port ensuring that important equipment is guaranteed power whenever necessary.

Viewing PoE Information

This section provides information about viewing port information and configuring PoE on the port and module level, and includes the following:

- **Viewing PoE Port Information**
- **Viewing PoE Configuration**

Viewing PoE Port Information

The Chassis View provides immediate information about PoE. Ports that are currently supplying power to IP telephones are labeled with a lightning bolt.

Viewing PoE Configuration

You can view PoE configuration information on the module and port levels.

To view the PoE configuration on a module that supports PoE, select the Power tab in the module's configuration dialog box. For more information about the Module Configuration dialog box, refer to "Viewing Module Configuration" on page 21.

To view the PoE configuration on a port that supports PoE, select the Power tab in the port's configuration dialog box. For more information about the Port Configuration dialog box, refer to "Viewing Port Configuration" on page 24.

5 G700 Media Gateway

This chapter provides information about the Avaya G700 Media Gateway and includes the following sections:

- **G700 Media Gateway Overview** - An overview of G700 functionality in Cajun P330 Devices.
- **G700 Device Configuration** - Information about viewing and configuring G700 components.
- **Avaya Site Administration** - Information about Avaya's gatekeeper software.

G700 Media Gateway Overview

G700 is a family of components which can deliver data, voice, fax, and messaging capabilities over an IP network.

The heart of the G700 system is the Media Gateway. The Media Gateway is a VoIP system that acts as an IP PBX and messaging server and a VoIP gateway. In addition, it performs the function of a gatekeeper and an IP media management resource for tone detection and generation, conferencing, and call classification.

The Media Gateway components are controlled through the Media Gateway Processor (MGP). The MGP detects when a media module is inserted or removed and transfers information from the VoIP engine to the other components.

G700 converges the power of Avaya Call Processing (ACP) software with the power of distributed switching from the Cajun P330 Device. It provides IP PBX functionality using open standards and an open operating system. The G700 device connects to ACP using either an internal or external call controller. The ACP serves as the G700's gatekeeper.

G700 Device Configuration

This section describes how to view and set the various configuration parameters relevant to the G700 Media Gateway. It includes the following sections:

- **Viewing Module Configuration** - View information specific to a G700 Media Gateway module in the device.
- **Viewing Media Module Configuration** - View information specific to a Media Module in the device.

Viewing Module Configuration

The Module Configuration dialog box provides you with information about a selected module. To view the configuration of a module:

Click the module symbol in the Tree View.

Or

Click the module's label in the Chassis View. The Module Configuration dialog box opens.

The Module Configuration dialog box for G700 modules contains four tabs:

- **Switch**
- **MG Config**
- **MGP Config**
- **MGC Config**

*** Note:** For information about configuring Avaya P330 Modules other than the G700 Media Gateway, refer to "Viewing Module Configuration" on page 21.

Switch

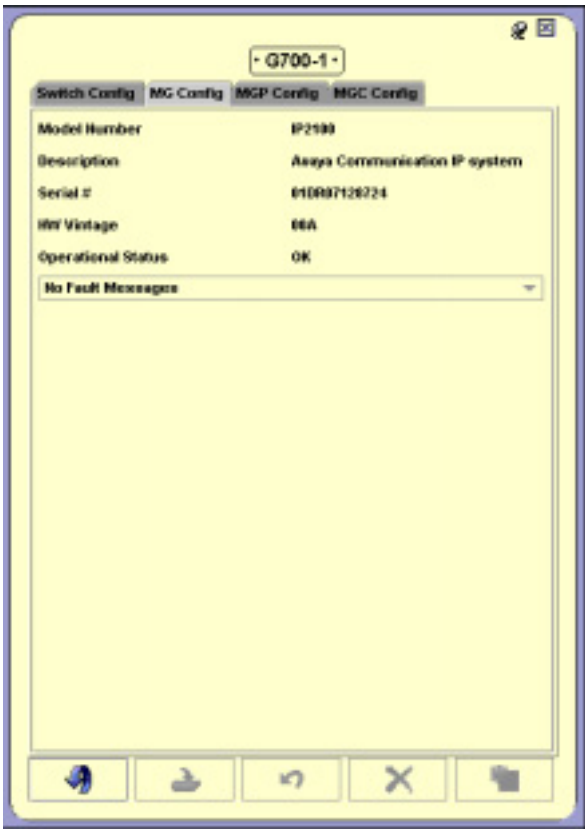
The Switch tab provides detailed information about the module, such as the module's position in the device, the module's type, description, number of ports, mode of operation, and any faults occurring on the module.

For information about the fields in the Switch tab, refer to Appendix C, *Configuration Fields.*

MG Config

The MG Config tab provides information about the Media Gateway's hardware configuration and operational status.

Figure 5-1. MG Config Tab



The following table lists the fields in the MG Config tab of the Module Configuration dialog box and their descriptions.

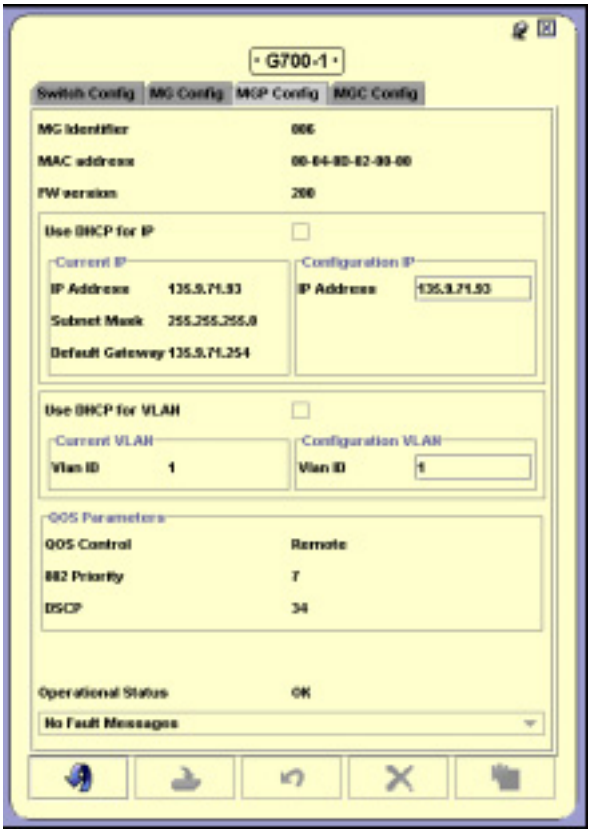
Table 5-1. MG Config Parameters

Field	Description
Model Number	The model number of the media gateway.
Description	A description of the gateway.
Serial #	The serial number of the gateway.
HW Vintage	The hardware vintage version of the gateway.
Operational Status	The operational status of the media gateway.

MGP Config

The MGP Config tab provides hardware information about the Media Gateway Processor. In addition, the MGP Config tab is used to configure IP, VLAN, and QoS parameters.

Figure 5-2. MGP Config Tab



General

The upper section of the MGP Config tab provides general information about a specific Media Gateway Processor.

The following table lists the General fields and their description.

Table 5-2. MGP Config Tab - General Parameters

Field	Description
MG Identifier	The ID of the MG that helps link the P330 module's port identification with the G700 Media Gateway's port identification.
MAC address	The MAC address of the media gateway processor.
FW version	The firmware version of the media gateway processor.

IP Address Settings

You can manually configure the IP address settings for the Media Gateway, or you can use a DHCP server. If you choose to use a DHCP server and it is not available, the manually configured settings are used.

The Current IP box displays the IP address configuration currently being used. If you are using a DHCP server, the information is received from the DHCP server, unless the DHCP server is not reachable. The information in the Current IP box is Read-only.

The Configuration IP box displays the IP configuration that is used either when you are not using a DHCP server, or if the DHCP server is not reachable.

The following table lists the IP address settings fields and their descriptions.

Table 5-3. MGP Config - IP Address Settings Parameters

Field	Description
Use DHCP for IP	The source of the Media Gateway's IP address, subnet mask, and gateway. • **Checked** - The Media Gateway tries to receive the IP address, subnet mask, and gateway address from the DHCP server. • **Unchecked** - The Configuration IP settings are used. *** Note:** The Use DHCP for IP field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the P330 User Guide.
IP Address	The IP address of the gateway processor.
Subnet Mask	The subnet mask of the gateway processor. When Use DHCP for IP is unchecked, the Subnet Mask is configured using the CLI. For more information on CLI commands, refer to the P330 User Guide.
Gateway	The default gateway of the gateway processor. When Use DHCP for IP is unchecked, the Gateway is configured using the CLI. For more information on CLI commands, refer to the P330 User Guide.

VLAN Settings

You can manually configure the VLAN to which the G700 Media Gateway belongs, or you can use a DHCP server.

The Current VLAN field displays the actual ID that you are using. If you are using a DHCP server, this information comes from the DHCP server, unless the server is not available. If you are not using a DHCP server, the information is taken from the Configuration VLAN field.

If you choose to use a DHCP server and it is not available, the VLAN ID is taken from the Configuration VLAN field.

The following table lists the VLAN settings fields and their descriptions.

Table 5-4. MGP Config - VLAN Settings Parameters

Field	Description
Use DHCP for VLAN	The source of the Media Gateway's VLAN ID. • **Checked** - The gateway receives its VLAN ID from the DHCP server. If the server is not available, the VLAN ID is taken from the Configuration VLAN field. • **Unchecked** - The gateway receives its VLAN ID from the Configuration VLAN field. *** Note:** The Use DHCP for VLAN field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the P330 User Guide.
VLAN ID	The VLAN ID of the gateway.

QoS Parameters

QoS can be controlled either locally or remotely. If control is remote, the information for these fields comes from the gatekeeper. If control is local, you can configure the 802 Priority and DSCP fields.

The following table lists the QoS parameters and their descriptions.

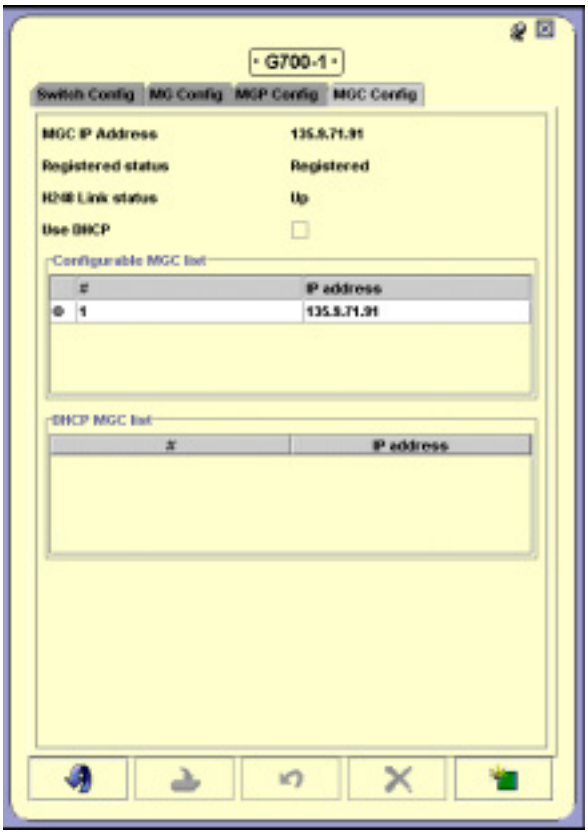
Table 5-5. MGP Config - QoS Parameters

Field	Description
QoS Control	The source of QoS control. This parameter can only be changed via the CLI. Possible values are: • **Local** - The processor is using the local QoS parameters. The 802 Priority and DSCP fields can be configured. • **Remote** - The processor is receiving QoS parameters from the Media Gateway Processor. All QoS parameters are Read-only.
802 Priority	Priority based on a 802.1p standard, which assigns rights and privileges to users of a telephony network. Possible values are 0 through 7.
DSCP	Priority based on a technology by which packets are marked in the IP header Type of Service (ToS) byte as belonging to a certain class. Possible values range between 0 through 63.

MGC Config

The MGC Config tab provides information about the Media Gateway Controller's settings, IP address, and registration information.

Figure 5-3. MGC Config Tab



MGC IP Settings

The MGC registers with the Media Gateway, after which it receives its IP address from the Media Gateway. After you register, the Link Status will be Up, and an IP address will appear.

The following table lists the MGC IP Settings fields and their descriptions.

Table 5-6. MGC Config - MGC IP Settings Parameters

Field	Description
MGC IP Address	The IP address of the call controller serving the media gateway.
Registered status	Shows whether this media gateway is currently registered with any call controller.
H248 Link Status	Status of the link connecting the media gateway to the active call controller.

Table 5-6. MGC Config - MGC IP Settings Parameters

Field	Description
Use DHCP	The source for the MGCs IP address. • **Checked** - The gateway or VoIP engine receives its controller IP address from the DHCP server. If the DHCP server is not available, an IP address in the Configurable MGC List is used. • **Unchecked** - The gateway or VoIP engine will receive a static IP address from the Configurable MGC List. *** Note:** The Use DHCP field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the P330 User Guide.

MGC Lists

The MGC List provides a list of controllers. If the MGP is unable to establish a connection with the first controller in the list, the MGP will try to establish a connection with the next controller in the list. This process continues until a connection is established with one of the controllers.

You can manually configure the MGC list or you can get the MGC list from the DHCP server.

To add an entry to the Configurable MGC list:

1. Click . A new row appears.
2. Enter the IP address and IP port for the entry. The new entry is created.

   The MGCs are registered in the order that they appear in the MGC list.

To modify an entry in the Configurable MGC list, modify the information in the entry's row in the table.

To delete an entry from the Configurable MGC list:

1. Select the entry in the list.
2. Click . The entry is deleted.

   — To select more than one entry, press **SHIFT** while selecting additional entries.

*** Note:** To apply the changes to the MGC list, click .

Viewing Media Module Configuration

To view the Media Module Configuration dialog box:

In Configuration Mode, click the media module symbol in the Tree View.

Or

Click the media module's label in the Chassis View. The Media Module Configuration dialog box opens.

Figure 5-4. Media Module Configuration Dialog Box

The Media Module Configuration dialog box provides information about a specific media module, including a brief description of the media module, the number of ports, and its operational status.

The following table lists the fields in the Media Module Configuration dialog box and their description.

Table 5-7. Media Module Configuration Parameters

Field	Description
MM Identifier	The Media Module's identifier.
MM Type	The type of Media Module. Possible values are: • E1/T1 • ISDN BRI • Analog • Digital • VoIP • ICC
MM Description	An optional description of the specific Media Module.
Name	The name of the Media Module
Serial #	The serial number of the Media Module.
HW Version	The version of the Media Module's hardware.
FW Version	The firmware version of the Media Module.
Number of Ports	The number of ports on the Media Module.
Operational Status	The operational status of the Media Module.

Avaya Site Administration

Avaya Site Administration (ASA) is an administration tool for Avaya Call Processing call control software. ASA is used to configure the current MGC, current CMG, or an individual voice port.

To launch ASA on an MGC, CMG, or voice port:

1. Click the component in the Tree View or Chassis View.
2. Click .

   Or

   Select **Action > Administer Station/Gateway**. ASA opens with the configuration form of the selected component.

For more information about ASA, refer to Definity Enterprise Management documentation.

6 VoIP Engine Configuration

This chapter provides information and instructions for viewing and configuring the VoIP Engine features. It includes the following sections:

- **VoIP Overview** - An overview of VoIP Engine functionality in G700 Media Gateway modules.
- **Configuring the VoIP Engine** - Instructions for viewing and configuring VoIP Engine parameters.

VoIP Overview

The VoIP Engine translates information between different VoIP and data protocols. The G700 device manager comes with an internal VoIP engine that supports up to 32 simultaneous sessions. Support for an additional 32 simultaneous sessions can be added by inserting a VoIP Media Module in the G700 Media Gateway Module.

Configuring the VoIP Engine

You can view information and configure parameters for the VoIP Engine using the VoIP Engine dialog box. To view the VoIP Engine dialog box:

1. Select a G700 Media Gateway module.
2. Click .

   Or

   Select **Action > VoIP Configuration**. The VoIP Engine dialog box opens.

The VoIP Configuration dialog box contains three tabs:

- **VoIP resources**
- **VoIP config**
- **VoIP status**

VoIP resources

The VoIP resources tab provides administration parameters common to all VoIP engines, such as the number of engines, QoS parameters, RTCP configuration, and RSVP configuration.

Figure 6-1. VoIP resources Tab

General

The upper section of this dialog box displays general information common to all VoIP engines.

The following table lists the general fields in the VoIP resources tab of the VoIP Engine dialog box and their description.

Table 6-1. VoIP resources - General Parameters

Field	Description
VoIP Engine #	The number of VoIP engines in the media gateway.

Table 6-1. VoIP resources - General Parameters (Continued)

Field	Description
Use DHCP	The source of the VoIP engine's controller IP address. • **Checked** - Each VoIP engine receives its controller IP address from the DHCP server. • **Unchecked** - The VoIP engine uses a static IP address from the MGC list. *** Note:** The Use DHCP field is read-only, and can be configured using the CLI. For more information on CLI commands, refer to the P330 User Guide.
RTP port Min	The minimum range of UDP ports assigned by the call controller for RTP traffic. The value ranges between 1 through 65534.
RTP port Max	The maximum range of UDP ports assigned by the call controller for RTP traffic. The value ranges between 3 through 65535.

QoS

QoS can be controlled either locally or remotely. If control is remote, QoS parameters are determined by the MGC. If control is local, it is possible to configure QoS, RTCP, and RSVP parameters.

The following table lists the QoS fields and their description.

Table 6-2. VoIP resources - QoS Parameters

Field	Description
QoS Control	The source of QoS control. This parameter can only be changed via the CLI. Possible values are: • **Local** - The processor uses the local QoS parameters. If the processor is using the local QoS parameters, the 802 Priority, EF DSCP, and BBE DSCP fields can be configured. • **Remote** - The processor receives its QoS parameters from the Media Gateway Controller. All QoS parameters are Read-only.
802 Priority	Priority based on a CoS standard which assigns rights and privileges to users of a telephony network. Possible values are 0 through 7.

Table 6-2. VoIP resources - QoS Parameters (Continued)

Field	Description
EF DSCP	A type of differentiated service used to provide guaranteed bandwidth across a network. If sufficient bandwidth is available, the Expedited Forwarding class can be used. The values range between 0-63.
BBE DSCP	A DiffServ class which is used per call to achieve the greatest possible bandwidth. The values range between 0-63.

RTCP Monitoring

RTCP is an IP protocol that is used to monitor the quality of RTP packets. Quality is measured in terms of delay, jitter, and packet loss.

If RTCP monitoring is enabled, the VoIP engines send RTCP packets to the RTCP monitor. You must configure an IP address for the RTCP monitor, and determine intervals at which the RTCP data is checked.

The following table lists the RTCP monitoring fields and their description.

Table 6-3. VoIP resources - RTCP monitoring Parameters

Field	Description
Monitoring Enabled	The status of RTCP monitoring. • **Checked** - RTCP monitoring is enabled. • **Unchecked** - RTCP monitoring is not enabled.
IP address	The IP address of the RTCP monitor.
Port	The port monitored by RTCP.
Report Period	The interval for RTCP reports.

RSVP

RSVP is a protocol that signals the router to reserve bandwidth.

If RSVP is enabled, the G700 Media Gateway tries to reserve a specific amount of bandwidth per call session. If this fails, the Media Gateway tries to reallocate the bandwidth during the call session.

The following table lists the RSVP fields and their description.

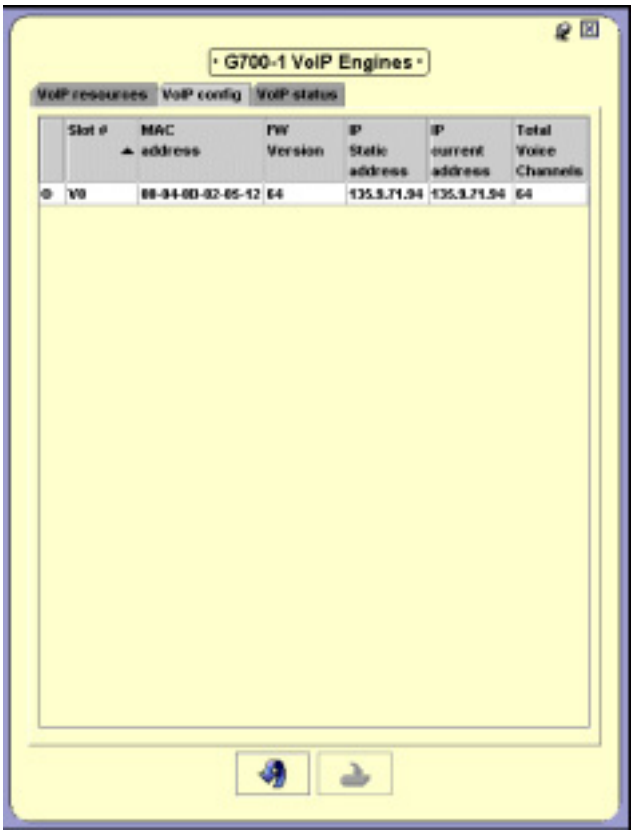
Table 6-4. VoIP resources - RSVP Parameters

Field	Description
RSVP Enabled	The Status of RSVP usage. • **Checked** - The G700 Media Gateway will try to reserve bandwidth per call. If it fails, the G700 Media Gateway will try again during the call. • **Unchecked** - RSVP is not enabled.
Retry on failure	The action the VoIP engine takes after an RSVP request fails. • **Checked** - The VoIP engine resends a RSVP request if the first attempt failed. • **Unchecked** - The VoIP Engine drops the RSVP request, and the Retry Delay field is ignored.
Retry Delay	The interval the VoIP Engine waits after a failed RSVP request before sending the new request. The interval ranges between 0.5-60 seconds.
Service profile	The type of service being provided.

VoIP config

The VoIP config tab allows you to view information about a specific VoIP engine's configuration.

Figure 6-2. VoIP config Tab



If a DHCP server is being used, the IP address for the VoIP engine is taken from the DHCP server. Otherwise, you can configure the IP address to be used in the IP Static Address field. In addition, it is possible to see how many VoIP channels are available on this engine.

The following table lists the fields in the VoIP config tab and their description.

Table 6-5. VoIP config Parameters

Field	Description
Slot #	The slot in which the VoIP media module engine is located.
MAC address	The MAC address of the VoIP engine.
FW Version	The firmware version on the VoIP engine.

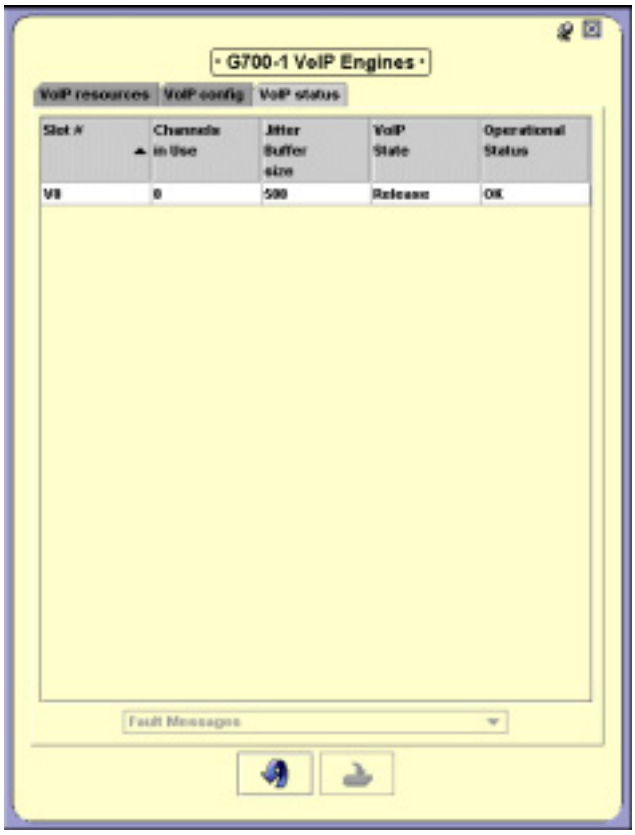
Table 6-5. VoIP config Parameters (Continued)

Field	Description
IP static address	The IP address assigned to the VoIP Engine when not using the DHCP server.
IP current address	The current IP address of the VoIP engine.
Total Voice Channels	Total number of channels available for this VoIP engine.

VoIP status

The VoIP status tab provides information about a specific engine's operational status, jitter buffer size, and number of sessions open.

Figure 6-3. VoIP status Tab



The information in the VoIP status tab is provided by the VoIP engine and is refreshed periodically.

The following table lists the fields in the VoIP status tab and their descriptions.

Table 6-6. VoIP status Parameters

Field	Description
Slot #	The slot in which the VoIP engine is located.
Channels in Use	The number of channels currently being used.
Jitter Buffer Size	The jitter buffer is a temporary storage area built into the receiver of each gateway. It uses a mechanism to remove the random delays between packets, which occur as the packets are routed through the network.
VoIP State	The state of the VoIP engine.
Operational Status	The operational status of the VoIP engine.

7 Port RMON

This chapter explains the port RMON options of the Cajun P330 Device. It includes the following sections:

- **Displaying the Port RMON Window** - How to display the Port RMON window, and an explanation the Port RMON window.
- **Traffic Types** - How to select traffic to monitor in the Port RMON window.

To view Port RMON information, you must be in Port RMON mode. To switch to Port RMON mode:

Click .

Or

Select **View > Port RMON**.

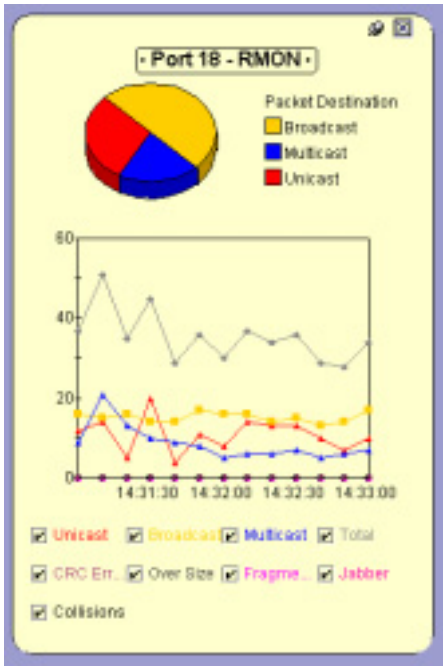
For more information on RMON, refer to *RMON* in *The Reference Guide*.

*** Note:** Port RMON is not available when running the Cajun P330 Manager via Web Management.

Displaying the Port RMON Window

To display the Port RMON window, select a port or a LAG in the Chassis or Tree View. The Port RMON window opens.

Figure 7-1. Port RMON Window



The Port RMON window includes three sections. At the top of the window is a pie chart. In the center of the window is a graph section. At the bottom of the window is a list of traffic types.

The Pie Chart

The pie chart shows the relative amounts of Unicast and Non-Unicast traffic on a selected port or LAG. The legend to the right of the pie chart shows the color representing each of the traffic types.

The Traffic Graph

The graph charts various traffic types over time. Each traffic type is represented by a different colored line. Using the mouse, you can view traffic statistics, zoom in or out of the graph, and scroll within the graph to view parts of the graph that are currently hidden.

When changing the view on the graph, the graph freezes. To unfreeze the graph and restore the display to the default display, click on the graph.

Viewing Traffic Statistics

To view traffic statistics, hold the mouse over a point on the graph representing the traffic for which you would like to see statistics. After two seconds, an info box appears displaying the name of the traffic type represented by the line in the graphic, and the traffic rate at the selected point.

Zooming In and Out of the Graph

To zoom out and view a graph of all the traffic on the selected port from the time the application was opened, double-click the graph. The graph is compressed to show all of the traffic on the port from the time the application was opened until now.

To zoom in on a portion of the graph, press **SHIFT** and select a portion of the graph using the mouse. The graph zooms in and shows only the portion of the graph that was selected.

Scrolling within the Graph

To scroll within the graph, hold the left mouse button down while moving the mouse from the graph in the direction you want to scroll. The graph scrolls in the selected direction.

Unfreezing the Graph

When zooming or scrolling within the graph, the display freezes and is not updated with the current information. To reactivate the display, click anywhere in the graph. The graph display is restored to normal, and the graph is reactivated.

Traffic Types

The bottom of the Port RMON window contains a list of various types of traffic. Each traffic type has a checkbox next to it. Only traffic types whose checkboxes are checked are displayed in the Port RMON graph.

For a full description of the traffic types, refer to *Appendix D, Traffic Types.*

8 VLANs

This chapter provides the information and instructions you need to use VLANs. It includes the following topics:

- **VLANs Overview** - An overview of VLANs and their components.
- **Viewing the Virtual LANs Dialog Box** - Instructions on accessing the VLANs dialog box and a description of the VLANs dialog box.
- **Configuring VLANs** - Instructions on creating, deleting, and renaming VLANs.
- **Editing VLAN Member Switch Ports** - Instructions on adding and removing ports from VLANs.
- **Editing VLAN Tagging Parameters** - Instructions on editing VLAN tagging parameters.
- **Updating the Device** - Instructions on updating the device with new VLAN information.

VLANs Overview

The building blocks of VLANs are switch ports. To build a new VLAN you need to define a VLAN name and number, and then decide which switch ports will make up the VLAN.

VLAN #1 is the default VLAN and is named Default.

For more information about VLANs, refer to *VLANs* in *The Reference Guide.*

Viewing the Virtual LANs Dialog Box

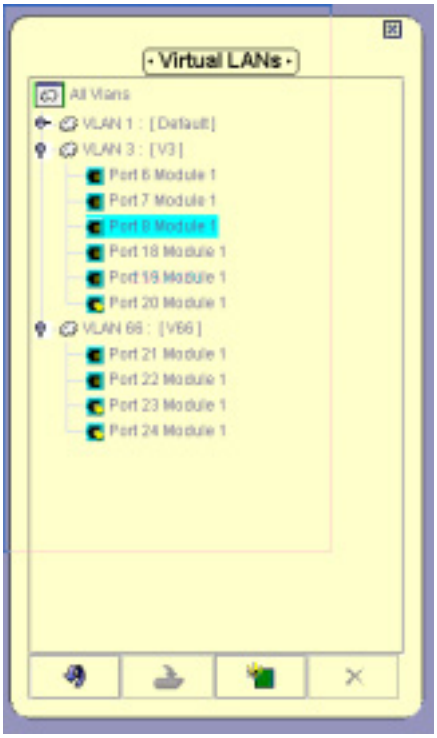
To view VLAN names, numbers, and component switch ports and LAGs:

Click .

Or

Select **Actions > Virtual LANs**. The Virtual LANs dialog box opens.

Figure 8-1. Virtual LANs Dialog Box



The tree in the Virtual LANs dialog box displays all configured VLANs. To view the member ports and LAGs of a VLAN:

Double-click the VLAN's name.

Or

Click the handle next to the VLAN's name. The tree expands to show the ports and LAGs associated with the VLAN.

Ports that use tagging mode have yellow tags attached to their port symbols. In the Chassis View, the ports associated with the selected VLAN appear in color. All other ports appear dark gray.

Configuring VLANs

To create a new VLAN:

1. Click . A new VLAN appears in the list.
2. Enter a name and number for the VLAN into the appropriate fields. The VLAN is added immediately.

*** Note:** The range of valid VLAN numbers is 1 to 3071.

To delete a Virtual LAN:

1. Select the VLAN you want to delete.
2. Ensure that there are no ports associated with the VLAN.
3. Click .

   Or

   Right-click the VLAN symbol and select **Delete**. The VLAN is deleted.

To edit VLAN names:

1. Select the VLAN whose name you want to edit.
2. Right-click the VLAN symbol and select **Rename**. A text field opens.
3. Enter the new name for the VLAN.
4. Press **ENTER**. The VLAN name is changed.

Editing VLAN Member Switch Ports

To assign switch ports or LAGs to VLANs:

1. Select one or more ports or LAGs in the Chassis or Tree View.
2. Drag the ports or LAGs until they are over a VLAN icon in the tree.

   Or

   Drag ports or LAGs from existing VLANs to the desired VLAN's icon. The ports or LAGs are added to the desired VLAN in the table.

*** Note:** You can reassign the Management VLAN ID by dragging , over the desired VLAN's icon.

To disassociate switch ports or LAGs from VLANs, associate the ports or LAGs to the default VLAN (VLAN 1).

*** Note:** Ensure that linked ports and LAGs are assigned to the same VLAN.

Editing VLAN Tagging Parameters

To edit the VLAN Tagging parameters of a port or LAG:

1. Right-click the port or LAG in the VLANs table.
2. Select the VLAN Tagging mode for the selected port or LAG.

*** Note:** VLAN Tagging parameters can also be edited using the Port and LAG Configuration dialog boxes.

Updating the Device

Ports and LAGs whose VLAN information has changed appear dimmed in the VLANs table. To update the device with the changes, click .

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

9 Link Aggregation Groups

This chapter provides the information and instructions for creating and using Link Aggregation Groups (LAGs). It includes the following topics:

- **LAGs Overview** - An overview of LAGs.
- **Viewing the LAG Table** - Instructions on accessing the LAG Table and a description of the LAG Table.
- **Creating LAGs** - Instructions on creating LAGs.
- **Editing LAGs** - Instructions on editing LAGs.
- **The LAG Wizard** - Detailed descriptions of the screens in the LAG Wizard.
- **Deleting LAGs** - Instructions on deleting LAGs.

For information on configuring LAGs, refer to “Viewing LAG Configuration” on page 23.

LAGs Overview

Link Aggregation Groups (LAGs) provide a method of creating a high-bandwidth link. A LAG consists of a group of ports acting as a single logical port. All ports participating must have the same configuration.

For more information on LAGs, refer to *Link Aggregation Groups (LAGs)* in *The Reference Guide*.

Viewing the LAG Table

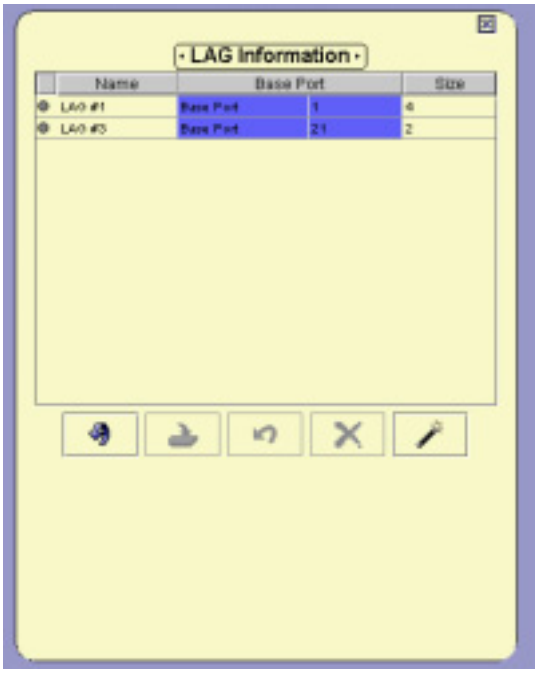
To view the LAG Table:

Click .

Or

Select **Actions > Link Aggregation**. The LAG Information table opens.

Figure 9-1. LAG Information Dialog Box



Each row of the LAG table represents a valid Link Aggregation Group and provides the following information:

- **Name** - The LAG name.
- **Base Port** - The number of the LAG's base port.
- **# of Ports** - The number of ports assigned to the LAG.
- **Size** - The size of the LAG.

When a LAG is selected, the ports in the LAG appear highlighted in the Chassis and Tree View.

Creating LAGs

To create a new LAG, click . The LAG Wizard starts.

For more information, refer to “The LAG Wizard” on page 57.

Editing LAGs

To edit an existing LAG:

1. Select a LAG by clicking on the row representing the LAG.
2. Click . The LAG Wizard starts.

When editing a LAG, the LAG Wizard’s dialog boxes display the current LAG configuration parameters. To keep the values currently displayed in one of the dialog boxes, click **Next**. If you have changed some of the LAG’s parameters, and you want to keep the rest of the LAG’s configuration, click **Finish**. The device is updated with the LAG’s new configuration.

For more information, refer to “The LAG Wizard” on page 57.

The LAG Wizard

This section provides detailed information on each of the LAG Wizard’s screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the LAG Wizard without making any changes, click **Cancel**. To view on-line help about a screen, click and then the wizard screen.

The LAG Wizard consists of the following screens:

- **Welcome**
- **Base Port Selection**
- **Other Port Selection**
- **LAG Name**
- **Confirmation**

The following sections describe each of the LAG Wizard screens.

LAG Wizard - Welcome

The LAG Wizard provides a simple, step-by-step method for creating a LAG.

Figure 9-2. LAG Wizard - Welcome Screen

Link Aggregation Group
Welcome to the Link Aggregation Group (LAG) Wizard.
This wizard will guide you through the process of creating a new LAG.
To proceed, please press 'Next'.
Cancel
<< Back
Next >>
Finish

To continue, click **Next**. The LAG Wizard continues with the LAG Wizard - Base Port Selection screen.

LAG Wizard - Base Port Selection

The Base Port Selection screen of the LAG Wizard helps you select a base port for the LAG. The attributes of the base port (port speed, port mode, etc.) are applied to the other member ports of the LAG. Ports which can be selected as base ports appear white in the Chassis View.

*** Note:** Ports that participate in a Port Redundancy cannot be assigned to a LAG.

Figure 9-3. LAG Wizard - Base Port Selection Screen

Select Base Port
Please select the Base Port for your trunk, by clicking on one of the highlighted ports in the zoom.
Base Port:
Port 24
Cancel
<< Back
Next >>
Finish
Select Base Port

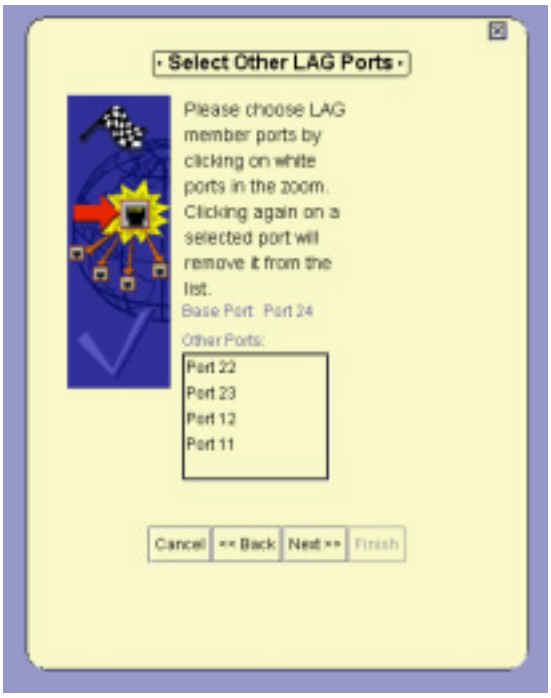
To select a base port for the LAG, click a port in the Chassis View. The selected port is listed in the Base Port field of the wizard and appears blue in the Chassis View and Tree View.

When you have selected the base port for the LAG, click **Next**. The LAG Wizard continues with the LAG Wizard - Other Port Selection screen.

LAG Wizard - Other Port Selection

The Other Port Selection screen of the LAG Wizard helps you select additional ports for the LAG. Ports which can be selected as additional ports appear in white in the Chassis View.

Figure 9-4. LAG Wizard - Other Port Selection Screen


Select Other LAG Ports
Please choose LAG member ports by clicking on white ports in the zoom. Clicking again on a selected port will remove it from the list.
Base Port: Port 24
Other Ports:
Port 22
Port 23
Port 12
Port 11
Cancel
<< Back
Next >>
Finish

To select additional ports for the LAG, click ports in the Chassis View. The selected ports appear cyan in the Chassis View and Tree View and are listed in the Other Ports field in the wizard.

To remove selected ports from the list, click the selected ports in the Chassis View. The selected ports appear white in the Chassis View and Tree View and are removed from the Other Ports field in the wizard.

When you have finished selecting the additional ports for the LAG, click **Next**. The LAG Wizard continues with the LAG Wizard - LAG Name screen.

LAG Wizard - LAG Name

The LAG Name screen of the LAG Wizard enables you to assign a name to the LAG.

Figure 9-5. LAG Wizard - LAG Name Screen

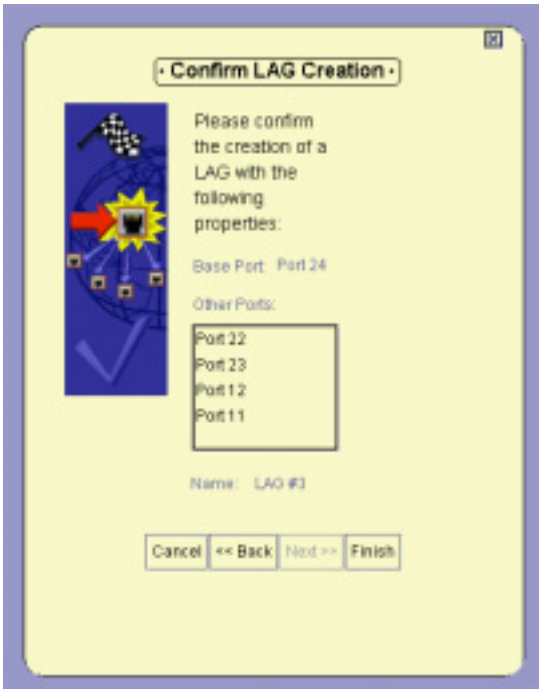
To assign a name to the LAG, enter the name for the LAG in the LAG Name field.

When you have entered a name for the LAG, click **Next**. The LAG Wizard continues with the LAG Wizard - Confirmation screen.

LAG Wizard - Confirmation

The LAG Wizard displays a summary of the LAG information entered using the previous screens. The LAG has not yet been created.

Figure 9-6. LAG Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the LAG's parameters.
3. Click **Next** until you reach the Confirmation screen.

To create the LAG or apply the changes to the LAG's configuration, click **Finish**. The LAG information is uploaded to the device, and the LAG table is refreshed.

Deleting LAGs

To delete an existing LAG:

1. Select a LAG by clicking on the row representing the LAG.
2. Click .
3. The LAG is marked with the symbol.
4. Click to update the device.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

For more information on tables, refer to “Managing Tables” on page 7.

10 Port Redundancy

This chapter provides the information and instructions for using the Port Redundancy feature. It includes the following topics:

- **Overview of Port Redundancy** - An overview of port redundancy.
- **Viewing the Port Redundancy Table** - Instructions on accessing the Port Redundancy Table, and a description of the Port Redundancy Table.
- **Adding a Port Redundancy** - Instructions on configuring a new port redundancy.
- **Port Redundancy Wizard** - Detailed descriptions of the screens in the Port Redundancy Wizard.
- **Deleting Port Redundancies** - Instructions on deleting port redundancies.
- **Updating the Device** - Instructions on updating the device with the changes made to the Port Redundancy Table.

Overview of Port Redundancy

Port Redundancy enables you to define a redundancy relationship between any two ports or LAGs in a device, or between a port and a LAG. One port or LAG is defined as the primary port and the other as the secondary port. In case the primary port link fails, the secondary port takes over. This connection between the two ports is called a Port Redundancy.

An Intermodule Port Redundancy provides a port redundancy service that operates even when the primary port link fails as the result of a failure of the module. For example, if the module on which the primary port in an Intermodule Port Redundancy is located powers down or is removed from the device, the secondary port in the Intermodule Port Redundancy takes over.

*** Note:** Only one intermodule port redundancy can be configured on a device.

Individual member ports of a LAG can not participate in a Port Redundancy. However, you can define Port Redundancy on a complete LAG.

*** Note:** Port Redundancy cannot be used when Spanning Tree is activated.

For more information on Port Redundancy, refer to *Redundancy* in *The Reference Guide*.

Viewing the Port Redundancy Table

To view the Port Redundancy table:

Click .

Or

Select **Actions > Port Redundancy**. The Port Redundancy Table opens.

Figure 10-1. Port Redundancy Table

The Port Redundancy table provides a list of all port redundancies configured on the switch, with their respective primary and secondary ports.

Adding a Port Redundancy

To add a new Port Redundancy:

1. Click . The Port Redundancy Wizard starts. For more information, refer to “Port Redundancy Wizard” on page 66.

Or

1. Click . A row is added to the Port Redundancy Table.
2. Enter a name for the Port Redundancy in the Name field.
3. Select a port or a LAG from the Tree View or the Chassis View and drag it to the Primary Port field. The port number or LAG name appears in the Primary Port field.
4. Select a port or a LAG from the Tree View or the Chassis View and drag it to the Secondary Port field. The port number or LAG name appears in the Secondary Port field.
5. To configure the port redundancy as an extra resilient port redundancy, check the **Intermodule** checkbox.

*** Note:** Only one intermodule port redundancy can be configured on a device.

6. Update the device. For more information on updating the device, refer to “Updating the Device” on page 72.

*** Note:** Ports already designated in one redundancy scheme can not be selected for another one.

Port Redundancy Wizard

This section provides detailed information on each of the Port Redundancy Wizard’s screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Port Redundancy Wizard without making any changes, click **Cancel**. To view on-line help about a screen, click and then the wizard screen.

The Port Redundancy Wizard consists of the following screens:

- **Welcome**
- **Primary Port Selection**
- **Secondary Port Selection**
- **Name and Type**
- **Confirmation**

The following sections describe each of the Port Redundancy Wizard screens.

Port Redundancy Wizard - Welcome

The Port Redundancy Wizard provides a simple, step-by-step method for creating a Port Redundancy.

Figure 10-2. Port Redundancy Wizard - Welcome Screen

Port Redundancy
Welcome to the Port Redundancy Wizard.
This wizard will guide you through the process of creating a port redundancy connection between two ports.
To proceed, please press 'next'.
Cancel
<< Back
Next >>
Finish

To continue, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Primary Port Selection screen.

Port Redundancy Wizard - Primary Port Selection

The Primary Port Selection screen of the Port Redundancy Wizard helps you select a primary port for the Port Redundancy. Ports and LAGs which can be selected as primary ports appear in white in the Chassis View.

Figure 10-3. Port Redundancy Wizard - Primary Port Selection Screen

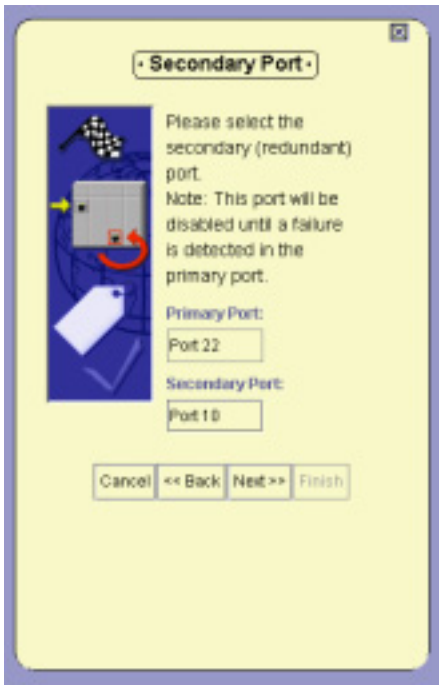
To select a primary port for the Port Redundancy, click a port or LAG in the Chassis View. The selected port or LAG appears blue in the Chassis View and Tree View and is listed in the Primary Port field in the wizard.

When you have selected the primary port for the Port Redundancy, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Secondary Port Selection screen.

Port Redundancy Wizard - Secondary Port Selection

The Secondary Port Selection screen of the Port Redundancy Wizard allows you to select a secondary port for the Port Redundancy. Ports and LAGs which can be selected as secondary ports appear white in the Chassis View.

Figure 10-4. Port Redundancy Wizard - Secondary Port Selection Screen



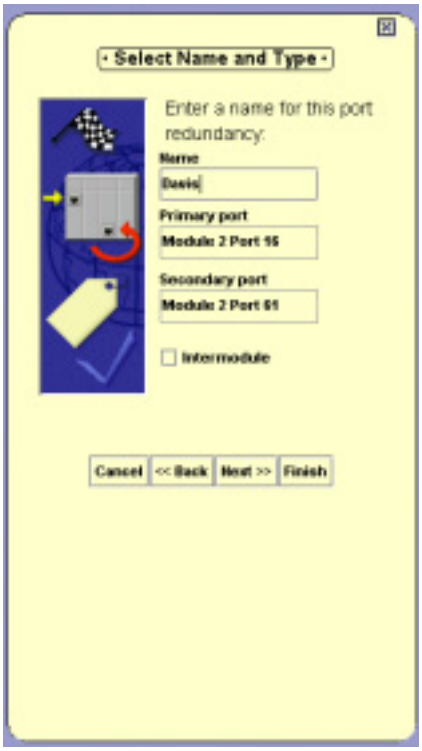
To select a secondary port for the Port Redundancy, click a port or LAG in the Chassis View. The selected port or LAG appears cyan in the Chassis View and Tree View, and is listed in the Secondary Port field in the wizard.

When you have finished selecting the secondary port for the Port Redundancy, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Name and Type screen.

Port Redundancy Wizard - Name and Type

The Port Redundancy Name and Type screen of the Port Redundancy Wizard allows you to assign a name for the Port Redundancy, and determine if the redundancy is an intermodule port redundancy.

Figure 10-5. Port Redundancy Wizard - Name and Type Screen



To assign a name to the Port Redundancy, enter the name for the Port Redundancy in the Name field.

To configure the redundancy as an intermodule Port Redundancy, check the Intermodule checkbox.

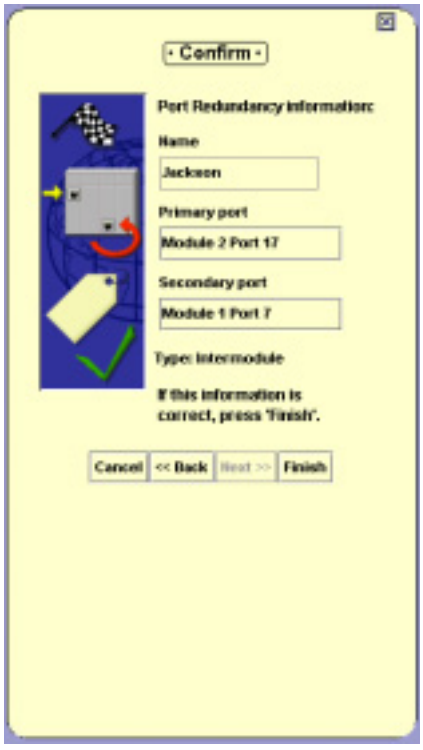
*** Note:** If an intermodule port Redundancy is already configured on the device, the Intermodule checkbox does not appear.

When you have selected a name and a type for the Port Redundancy, click **Next**. The Port Redundancy Wizard continues with the Port Redundancy Wizard - Confirmation screen.

Port Redundancy Wizard - Confirmation

The Port Redundancy Wizard displays a summary of the Port Redundancy information entered using the previous screens. The Port Redundancy has not yet been created.

Figure 10-6. Port Redundancy Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the Port Redundancy's parameters.
3. Click **Next** until you reach the Confirmation screen.

To create the Port Redundancy, click **Finish**. The Port Redundancy information is uploaded to the device, and the Port Redundancy table is refreshed.

Deleting Port Redundancies

To delete an existing Port Redundancy:

1. Select a Port Redundancy from the Port Redundancy Table.
   - To select more than one Port Redundancy, press **CTRL** while clicking on additional Port Redundancies.
2. Click . The selected Port Redundancies are marked with the symbol.

*** Note:** To edit Port Redundancy information, you must delete the Port Redundancy, and create a new one.

Updating the Device

To update the device with all changes made to the Port Redundancy table, click . The device is updated with all new information.

To discard all changes made to the Port Redundancy table, click . All changes made to the Port Redundancy table are discarded.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

For more information on tables, refer to “Managing Tables” on page 7.

11 Port Mirroring

This chapter provides the information and instructions for using the Port Mirroring feature. It includes the following topics:

- **Port Mirroring Overview** - An overview of port mirroring.
- **Configuring Port Mirroring** - Instructions on adding, editing, and deleting a port mirroring pair.
- **The Port Mirroring Wizard** - Detailed descriptions of the screens in the Port Mirroring Wizard.

Port Mirroring Overview

Port Mirroring copies all received and transmitted packets (including local traffic) from a source port to a predefined destination port, in addition to the normal destination port of the packets. This is a useful method for monitoring all traffic traveling through a specific port.

For more information on Port Mirroring, refer to *Port Mirroring* in *The Reference Guide*.

CAUTION

Do not change the VLAN of the source or destination port while the port mirroring mechanism is operating.

Configuring Port Mirroring

This section explains how to configure Port Mirroring on the Cajun P330 Device.

To configure Port Mirroring:

Click .

Or

Select **Actions > Port Mirroring**. The Port Mirroring Wizard opens.

The Port Mirroring Wizard

This section provides detailed information on each of the Port Mirroring Wizard's screens. To continue to the next screen, click **Next**. To return to an earlier screen, click **Back**. To exit the Port Mirroring Wizard without making any changes, click **Cancel**. To view on-line help about a screen, click and then the wizard screen.

The Port Mirroring Wizard consists of the following screens:

- **Create Welcome**
- **Edit/Delete Welcome**
- **Source Port Selection**
- **Destination Port Selection**
- **Frames Direction Selection**
- **VLAN Filtering**
- **Confirmation**

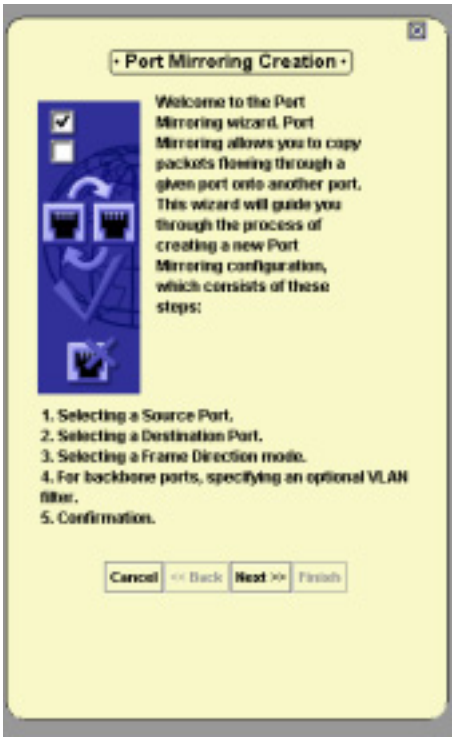
If Port Mirroring is not currently active on the device, the Port Mirroring Wizard starts with the Create Welcome screen. If Port Mirroring is currently active on the device, the Port Mirroring Wizard starts with the Edit/Delete Welcome screen.

The following sections describe each of the Port Mirroring Wizard screens.

Port Mirroring Wizard - Create Welcome

The Port Mirroring Wizard provides a simple, step-by-step method for defining a Port Mirroring pair.

Figure 11-1. Port Mirroring Wizard - Create Welcome

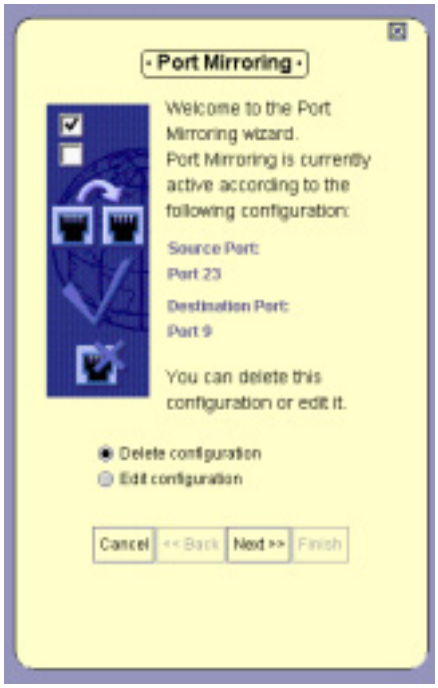

Port Mirroring Creation
Welcome to the Port Mirroring wizard. Port Mirroring allows you to copy packets flowing through a given port onto another port. This wizard will guide you through the process of creating a new Port Mirroring configuration, which consists of these steps:
1. Selecting a Source Port.
2. Selecting a Destination Port.
3. Selecting a Frame Direction mode.
4. For backbone ports, specifying an optional VLAN filter.
5. Confirmation.
Cancel
<< Back
Next >>
Finish

To continue, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Source Port Selection screen.

Port Mirroring Wizard - Edit/Delete Welcome

The wizard offers the choice of deleting or editing the existing Port Mirroring configuration.

Figure 11-2. Port Mirroring Wizard - Edit/Delete Welcome Screen



To delete the existing Port Mirroring configuration:

1. Select the **Delete configuration** radio button.
2. Click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Confirmation screen.

To edit the existing Port Monitoring configuration:

1. Select the **Edit configuration** radio button.
2. Click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Source Port Selection screen. The current configuration is reflected in the wizard's screens.

Port Mirroring Wizard - Source Port Selection

The Source Port Selection screen of the Port Mirroring Wizard helps you select a source port for the Port Mirroring pair. Ports which can be selected as sources appear in white in the Chassis View.

Figure 11-3. Port Mirroring Wizard - Source Port Selection Screen

Select Source Port
Please select the Source Port for your Port Mirroring configuration by clicking on one of the highlighted ports in the zoom.
Source Port:
Port 9 Module 1
Cancel
<< Back
Next >>
Finish

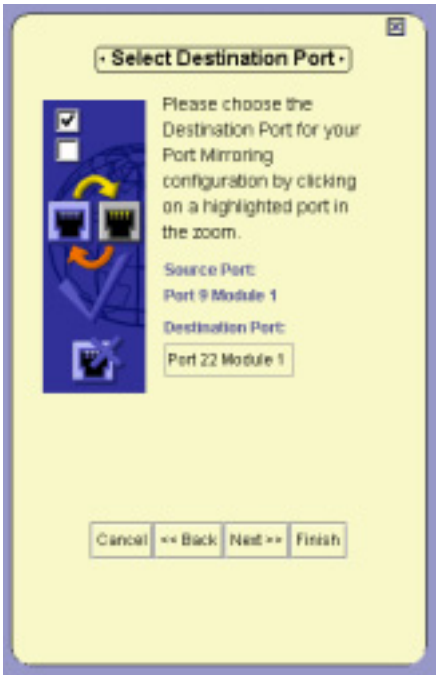
To select a source for the Port Mirroring pair, select a highlighted port in the Chassis View. The selected port appears blue in the Chassis View and Tree View and is listed in the Source Port field in the wizard.

When you have selected the source for the Port Mirroring, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Destination Port Selection screen.

Port Mirroring Wizard - Destination Port Selection

The Destination Port Selection screen of the Port Mirroring Wizard helps you select a destination port or LAG for the Port Mirroring pair. Ports and LAGs which can be selected as destinations appear white in the Chassis View.

Figure 11-4. Port Mirroring Wizard - Destination Port Selection Screen


Select Destination Port
Please choose the Destination Port for your Port Mirroring configuration by clicking on a highlighted port in the zoom.
Source Port:
Port 9 Module 1
Destination Port:
Port 22 Module 1
Cancel
<< Back
Next >>
Finish

To select a destination for the Port Mirroring pair, select a port or LAG in the Chassis View. The selected port or LAG appears cyan in the Chassis View and Tree View and is listed in the Destination Port field in the wizard.

When you have finished selecting the destination for the Port Mirroring pair, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Frames Direction Selection screen.

Port Mirroring Wizard - Frames Direction Selection

The Frames Direction Selection screen of the Port Mirroring Wizard enables you to select the traffic to be copied to the destination port. You can configure the destination port to receive all traffic going through the source port, or only the traffic received by the source port.

Figure 11-5. Port Mirroring Wizard - Frames Direction Selection Screen

Select Frames Direction mode
Please choose the Frames Direction mode for your Port Mirroring configuration by selection the appropriate option in the Frames Direction Mode combo box.
Source Port:
Port 9 Module 1
Destination Port:
Port 22 Module 1
Frames Direction Mode:
Rx Frames Only
Cancel
<< Back
Next >>
Finish

To configure which frames are copied to the destination port, select an option from the Frames Direction Mode pull-down list box. Possible options are:

- **All Frames** - All traffic going through the source port is copied to the destination port.
- **Rx Frames** - Traffic received by the source port is copied to the destination port.

When you have finished selecting the traffic to be copied, click **Next**. If the source port is configured with IEEE 201.Q VLAN Tagging, the Port Mirroring Wizard continues with the Port Mirroring Wizard - VLAN Filtering screen. Otherwise, the Port Mirroring Wizard continues with the Port Mirroring Wizard - Confirmation screen.

Port Mirroring Wizard - VLAN Filtering

The VLAN Filtering screen of the Port Mirroring Wizard enables you to filter the information copied to the destination port by VLAN number.

Figure 11-6. Port Mirroring Wizard - VLAN Filtering Screen

- Select VLAN Filter -
You have chosen a backbone port as Source Port. You may monitor all traffic flowing through this port, or filter on a specific VLAN.
Source Port:
Module 2 Port 3
Destination Port:
Module 2 Port 8
Frame Direction Mode:
All Frames
VLAN Filter:
All VLANs
Cancel
<< Back
Next >>
Finish

To configure which frames are copied to the destination port, select an option from the VLAN Filter pull-down list box. Possible options are:

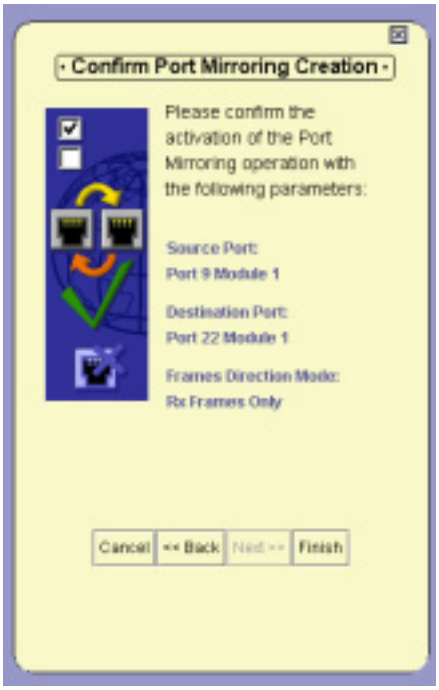
- **All VLANs** - The destination port is configured with IEEE 201.Q VLAN Tagging, and all information from the source port is copied to the destination port.
- **VLAN** *x* - The destination port is configured with the selected VLAN, and only packets tagged with that VLAN number are copied to the destination port.

When you have finished selecting the traffic to be copied, click **Next**. The Port Mirroring Wizard continues with the Port Mirroring Wizard - Confirmation screen.

Port Mirroring Wizard - Confirmation

The Port Mirroring Wizard displays a summary of the Port Mirroring information entered using the previous screens. The Port Mirroring configuration has not yet been uploaded to the device.

Figure 11-7. Port Mirroring Wizard - Confirmation Screen



To make any changes to the summary information:

1. Click **Back** until you reach the screen you want.
2. Change the Port Mirroring parameters.
3. Click **Next** until you reach the Confirmation screen.

To upload the Port Mirroring configuration to the device, click **Finish**. The Port Mirroring configuration is uploaded to the device.

12 IP Multicast Filtering

This chapter provides information on configuring IP Multicast Filtering on the Cajun P330 Device. It includes the following sections:

- **IP Multicast Filtering Overview** - A brief overview of IP Multicast Filtering.
- **Configuring IP Multicast Filtering** - Instructions on accessing the IP Multicast Filtering dialog box and descriptions of the parameters in the IP Multicast Filtering dialog box.

IP Multicast Filtering Overview

IP Multicast Filtering provides a method for distributing high-bandwidth applications to specific stations that may be configured on different VLANs. It allows for a single copy of the data to be propagated on the network, copied only when the paths to endstations diverge.

For more information on IP Multicast and IP Multicast Filtering, refer to *IP Multicast* in *The Reference Guide*.

Configuring IP Multicast Filtering

To configure IP Multicast Filtering:

Click .

Or

Select **Actions > IP Multicast Filtering**. The IP Multicast Filtering dialog box opens.

Figure 12-1. IP Multicast Filtering Dialog Box

The IP Multicast Filtering dialog box enables you to configure IP Multicast filtering parameters on the Cajun P330 Device. It contains the information about IP Multicast Filtering including the filter mode, the host and route aging time, and the delay time.

Enter the IP Multicast filtering parameters for the Cajun P330 Device.

To apply the changes, click .

To refresh the information in the IP Multicast Filtering dialog box, click .

13 Trap Managers Configuration

This chapter provides the information and instructions for configuring managers for the Cajun P330 Device. It includes the following topics:

- **Trap Manager Overview** - An overview on Traps and Managers.
- **Viewing the Trap Managers Table** - Instructions on accessing the Trap Managers Table, and a description of the Trap Managers Table.
- **Editing the Trap Managers Table** - Instructions on how to edit the Trap Managers Table.

Trap Manager Overview

In the event of a fault or an unusual occurrence, the Cajun P330 can send traps to one or more Network Management Stations (NMS). To enable this feature, you must configure the Cajun P330 with a list of the managers' workstations. Traps are then sent to the stations listed in the Managers table.

*** Note:** Up to five managers can be assigned per device. However, it is recommended to keep the list limited to actual and relevant managers so as not to place undue stress on the network.

Using the Trap Managers Table, you can also configure which traps are sent to specific managers. The columns to the right of the managers' IP addresses represent specific traps. Checking the checkbox in a trap column enables the manager to receive the checked trap. Managers only receive the traps which are checked.

Viewing the Trap Managers Table

To view the Trap Managers table:

Click .

Or

Select **Actions > Trap Managers**. The Trap Managers table opens.

Figure 13-1. Trap Managers Table

The Device Trap Managers table is used to configure the IP addresses of the trap managers and their trap reporting statuses for device wide traps. Traps include power, fan, faults, and module insert/remove traps.

Each G700 Media Gateway module has its own Trap Managers table, which can be used to configure IP addresses and trap managers for the specific module.

*** Note:** Device wide trap settings do not apply to traps from G700 Media Gateways in the device.

For a description of all traps in the Trap Managers table, refer to Appendix E, *Trap Fields*.

Editing the Trap Managers Table

You can add and remove managers from the Trap Managers table, and you can edit the trap reporting status of specific managers.

Adding and Removing Managers

To add managers to the table:

1. Click .
2. Enter the IP address of the designated management station.
3. Repeat the procedure for each manager.

To remove managers from the table:

1. Click the row with the manager's IP address.
2. Click .
3. Repeat the procedure for each manager.

Editing Trap Reporting Statuses

To edit the trap reporting status of a manager, check or uncheck the checkboxes next to the manager's IP address.

Checked traps will be reported to the manager.

*** Note:** If the Trap Enable checkbox is not checked, no traps will be reported to the selected manager.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 17.

For more information on tables, refer to "Managing Tables" on page 7.

14 Switch Connected Addresses

This chapter provides the information and instructions for viewing stations connected to the device. It includes the following topics:

- **Switch Connected Addresses Overview** - An overview of the Switch Connected Addresses feature.
- **Viewing the Switch Connected Address Window** - Instructions on accessing the Switch Connected for Device window, and a description of the Switch Connected for Device window.

Switch Connected Addresses Overview

The Switch Connected Addresses feature allows you to see which devices are connected to the ports on the Cajun P330 Device. Keeping track of this network information can increase efficiency and security, and assist in troubleshooting network problems.

Viewing the Switch Connected Addresses Window

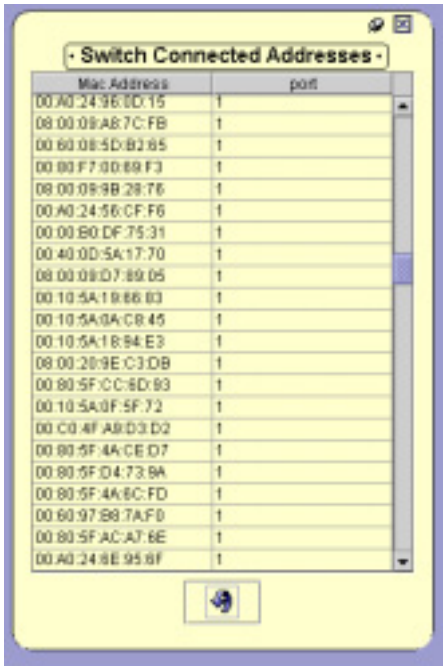
The Switch Connected Addresses window provides a list of MAC addresses along with the ports to which they are attached. To view the list of connected stations:

Click .

OR

Select **Actions > Switch Connected Addresses**. The Switch Connected Addresses window opens.

Figure 14-1. Switch Connected Addresses Window



All the connections to the Cajun P330 are listed with their respective ports in the Switch Connected Addresses window. The rows of the Switch Connected Addresses window comprise the following information:

- **Mac Address** - The MAC addresses of the stations connected to the switch.
- **Port** - The number of the port in the switch.

Sorting the List of Stations

To sort the list of stations, click on a column heading to sort by that column. To change the order of the sort (e.g. from ascending to descending), click again on the column heading of the field by which the list is sorted.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

15 Port Security

This chapter provides the information and instructions you need to use the Port Security feature. It includes the following topics:

- **Overview of Port Security** - An overview of port security.
- **Viewing the Port Security Window** - Instructions on accessing the Port Security window, and a description of the Port Security window.
- **Configuring Port Security** - Instructions on configuring port security.
- **Updating the Device** - Instructions on updating the device with Port Security changes.

Overview of Port Security

Port Security enables you to prevent unlearned devices from sending information through selected ports. Cajun P330 ports maintain a list of the MAC addresses of devices that are linked to them. This list is called the Content Address Memory (CAM). Before enabling security on a port, allow the port to learn the MAC addresses of the devices from which you want the port to forward traffic. Once Port Security is enabled on the port, it rejects all traffic from devices not listed in the CAM.

Viewing the Port Security Window

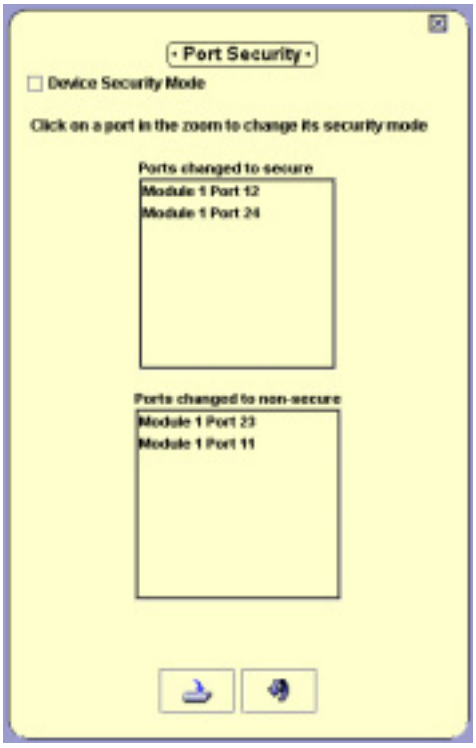
To view the Port Security window:

Click .

Or

Select **Actions > Port Security**. The Port Security window opens.

Figure 15-1. Port Security Window


Port Security
Device Security Mode
Click on a port in the zoom to change its security mode
Ports changed to secure
Module 1 Port 12
Module 1 Port 24
Ports changed to non-secure
Module 1 Port 23
Module 1 Port 11

The Port Security window shows the state of Port Security on the device. In the Tree View and Chassis View, ports which are configured with Port Security appear with the security symbol.

Configuring Port Security

To enable port security on a Cajun P330 Device, check the **Device Security Mode** checkbox. Port security is enabled on the device.

To disable port security on a Cajun P330 Device, clear the **Device Security Mode** checkbox. Port security is disabled on the device.

To toggle the state of port security activation on a port, click the port's symbol in the Tree View or Chassis View.

- If port security was not active on the port, the port is highlighted with the security symbol, and the port's module and port number appear in the Ports changed to secure list.
- If port security was active on the port, the port's security symbol disappears, and the port's module and port number appear in the Ports changed to non-secure from list.

Updating the Device

To update the device with all Port Security changes, click . The device is updated with all of the new information.

To discard all Port Security changes, click . All Port Security changes are discarded.

For more information on the user interface, refer to "Using Dialog Boxes and Tables" on page 17.

16 LEC Information

This chapter provides information and instructions on viewing information about the LECs that are attached to an ATM Access expansion module. It includes the following topics:

- **LEC Information Overview** - An overview of the LEC Information feature.
- **Viewing the LEC Information Window** - Instructions on accessing the LEC Information window and a description of the LEC Information window.

LEC Information Overview

The LEC information feature allows you to see which LECs are attached to the ATM Access expansion module and gives information on the status of each LEC.

Viewing the LEC Information Window

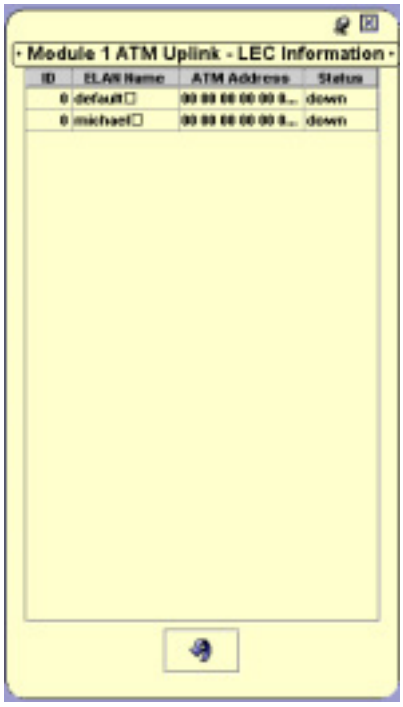
The LEC Information window provides a list of LEC devices attached to the ATM Access module, their ATM addresses, the ELAN to which each is attached, and the status of the LEC. To view the list of LEC devices:

Click .

Or

Select **Actions > LEC Information**. The LEC Information window opens.

Figure 16-1. LEC Information WIndow



All the LECs attached to the Cajun P330 are listed in the LEC Information window. The rows of the LEC Information window comprise the following information:

- **ID** - The ID number of the LEC.
- **ELAN Name** - The name of the LEC's ELAN.
- **ATM Address** - The ATM address of the LEC.
- **Status** - The status of the LEC.

Sorting the List of LECs

To sort the list of LECs, click on a column heading to sort by that column. To change the order of the sort (e.g. from ascending to descending), click again on the column heading of the field by which the list is sorted.

For more information on the user interface, refer to “Using Dialog Boxes and Tables” on page 17.

17 Routing Manager

This chapter provides an introduction to the Cajun P330 Routing Manager. It includes the following sections:

- **Router Modes** - An introduction to the different modes of the Cajun P330 Router.
- **The User Interface** - An introduction to the Cajun P330 Routing Manager user interface.
- **Editing Tables** - An explanation of how to edit Cajun P330 Routing Manager tables.
- **Saving Table Information as Text** - Instructions on how to save the information in a table to a text file.
- **Saving Configuration Changes** - An explanation of how to apply and save configuration changes to the Cajun P333R router.
- **Using Cajun P330 Routing Manager Help** - An explanation of the options for accessing on-line help in the Cajun P330 Routing Manager.

Router Modes

The Cajun P333R module provides routing capabilities in a Cajun P330 Device. The module can be configured with one of the following routing modes:

- Router
- EZ2route
- Second Layer

The default mode is Router. For information on changing the routing mode, refer to “Viewing Module Configuration” on page 21. Regardless of the routing mode, the Cajun P333R module performs as a second layer module.

Router

When configured with the Router mode, the Cajun P333R is a fully configurable router.

EZ2route

When configured with the EZ2route mode, the Cajun P333R performs true third layer forwarding with no configuration. The Cajun P333R automatically learns the routers in the network, and forwards packets addressed to those routers. This boosts the performance of the routers in the network without performing any active routing operations.

For information on viewing the configuration of EZ2route routers and a table of the routers they have learned, refer to Chapter 21, *EZ2route*.

Second Layer

When the Cajun P333R routing mode is configured as Second Layer, the module performs no routing functions.

The User Interface

The user interface consists of the following elements:

- **Tree View** - A resizeable window containing a hierarchical representation of the router modules in the device and configuration windows of Cajun P330 Routing Configuration.
- **Toolbar** - A toolbar providing shortcuts to the main Routing Manager functions.
- **Table Area** - A resizeable window where all tables are displayed.
- **Form Area** - A resizeable window where all forms appear.

For information on other parts of the user interface, refer to “The User Interface” on page 6.

The figure below shows the user interface, with its various parts labeled.

Figure 17-1. The Cajun P330 Routing Manager User Interface

To resize the main areas of the user interface, the Tree View, the Table Area, and the Form Area, use the splitter bars and their arrows.

Tree View

The Tree View shows the Cajun P333R modules in the device and the applicable configuration windows for each module.

The highest level of the Tree View shows the device's Cajun P333R modules. Each module that is configured as a router is shown. All modules configured as EZ2route appear under a single EZ2route icon. The second and third levels show the configuration windows applicable to the modules.

*** Note:** Cajun P333R modules that are configured with SecondLayer mode do not appear in the Tree View.

To expand the view of a contracted element in the tree or to contract the view of an expanded element in the tree:

Double-click the element.

Or

Click the handle next to the element you want to expand or contract.

Toolbar

The Toolbar provides shortcuts to the main Routing Manager functions.

The table below describes the buttons on the Application Toolbar and gives the equivalent menu options.

Table 17-1. Application Toolbar

Button	Description	Menu Item
	Saves the information in the table to a text file.	**File > Save**
	Saves all configuration changes to the device.	**File > Commit**
	Undoes changes made to the table or form currently displayed.	**Edit > Undo**
	Copies the selected information to the clipboard.	**Edit > Copy**
	Pastes information from the clipboard into the selected table row.	**Edit > Paste**
	Adds a row to the table.	**List > New**
	Deletes the selected table row.	**List > Delete**
	Refreshes the current table or form with information from the device.	**Device > Refresh from device**
	Sends the configuration information to the device.	**Device > Send to device**
	Opens a dialog box which enables you to specify the starting point in the display of a table.	**Device > Start Point**
	Stops loading information into the current table.	**Device > Stop**
	Toggles the display of a form corresponding to the current table.	**View > Form**
	Toggles the display of additional table parameters.	**View > More**
	Opens the on-line help for context-sensitive information.	**Help > Contents**

Table Area

The right side of the application window is the Table Area. This area can be resized by dragging the vertical splitter bar with the mouse. All tables appear in the Table Area. Table columns can be resized by dragging the dividers in the table header.

To view additional parameters in the table:

Click .

Or

Open Select **View > More**. Additional parameters appear in the table.

To hide additional parameters in the table:

Click .

Or

Select **View > More**. Additional parameters do not appear in the table.

Form Area

The area at the bottom of the Table Area is where all forms appear. This area can be resized by dragging the horizontal splitter bar with the mouse. When a form opens, it replaces the current form open in the Form Area.

Tables have associated forms that can be used to edit the information in a table row or insert information into a new table row.

To view the form associated with a table row:

1. Select a table row.
2. Click .

   Or

   Select **View > Form**. The associated form appears in the Form Area.

To hide the associated form:

Click .

Or

Select **View > Form**. The associated form disappears from the Form Area.

Editing Tables

The Cajun Routing Manager user interface enables you to create, modify, and delete table entries in selected windows. The information can be added directly into the table, or in the form associated with the table.

To undo all the changes made to a table, click . When all changes are finalized, click to update the router.

Creating New Table Entries

To create a new table entry:

1. Click . A new table entry is created.
2. Enter data in the fields as required.
3. Click to update the router.

Modifying Table Entries

To modify data in table entries:

1. Select the table entry you want to modify by clicking it.
2. Click a field.
3. Modify the value of the selected parameters.
4. When you are finished editing the table, click to update the router.

Deleting Table Entries

To delete a table entry:

1. Select the table entry you want to delete by clicking it.
2. Click to delete the selected entry from the table.
3. Click to update the router.

Saving Table Information as Text

Information in tables can be saved to text files. To save the information in the current table to a text file:

1. Click .

   Or

   Select **File > Save**. The File Save dialog box opens.

2. Use the browser to select a directory.
3. Enter a filename in the File name field.
4. Click **Save**. The information is saved as a text file to the specified file.

Saving Configuration Changes

There are two levels of applying routing configuration changes to the Cajun P333R:

- **Running changes** - Changes are applied to the router, but are not saved.
- **Committed changes** - Changes are saved to the router.

Running Changes

After finalizing all changes to a dialog box or table, the changes must be sent to the router. To send the changes to the router, click . The configuration changes are applied to the router.

The changes will remain in effect until the router is reset. When the router is reset, it is configured with the last saved configuration. All changes applied but not saved are lost.

Committed Changes

To make configuration changes permanent, the changes must be committed (saved) to the router. To commit the configuration to the router:

Click .

Or

Select **File > Commit**. The changes are committed to the router.

Using Cajun P330 Routing Manager Help

This section explains how to use the on-line help in the Cajun P330 Routing Manager. The on-line help can be opened to the contents page or directly to a topic of interest.

*** Note:** When running the Cajun P330 Manager via Web Management, on-line help is only available if you have installed the on-line help on your network and configured the Cajun P330 Device with the location of the help files. For information on installing the on-line help and configuring the device with the location of the files, refer to the *Cajun P330 User's Guide*.

Opening the Help to the Contents Page

To open the help to the contents page, select **Help > Contents**. The on-line help opens to the contents page.

Opening the Help to a Topic of Interest

To open the help directly to a topic of interest, click . The on-line help opens to a topic explaining the option currently selected in the Tree View.

18 Device

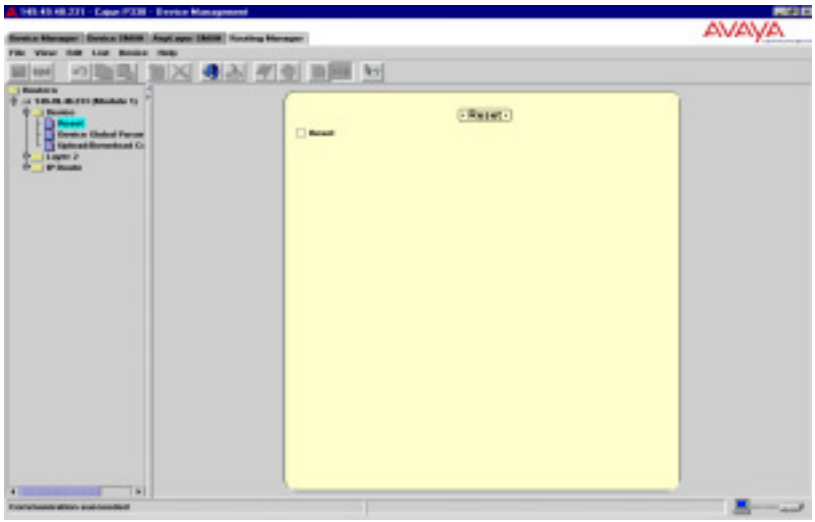
The Device folder provides access to the following windows:

- **Router**
- **Device Global Parameters**
- **Upload/Download Configuration**

Router

To reset the router, select **Device > Reset**. The Reset window opens.

Figure 18-1. Reset Window

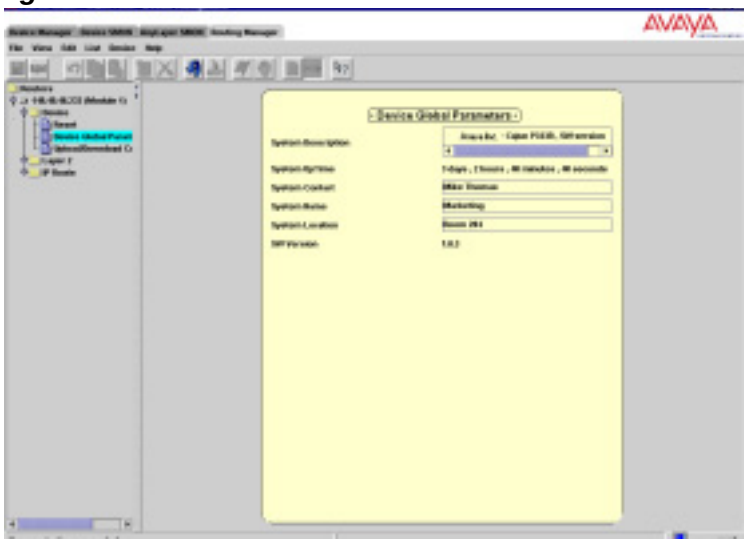


Check the **Reset** checkbox to reset the device. Before the management station sends the command to reset the device, it requests user confirmation for this action. After confirmation, the device performs a complete cold reset of the device.

Device Global Parameters

To display and update global system parameters, select **Device > Device Global Parameters**. The Device Global Parameters window opens.

Figure 18-2. Device Global Parameters Window



The following parameters are displayed:

Table 18-1. Global Parameters

Field	Description
System Description	A general description of the device.
System UpTime	The time elapsed since the device was reset.
System Contact	The name of the person responsible for the device.
System Name	The user-assigned name of the device that appears in the windows describing the device.
System Location	The location of the device.
SW Version	The software version of the code on the device (for example, 2.5.7).

You can edit the System Contact, System Name, and System Location fields.

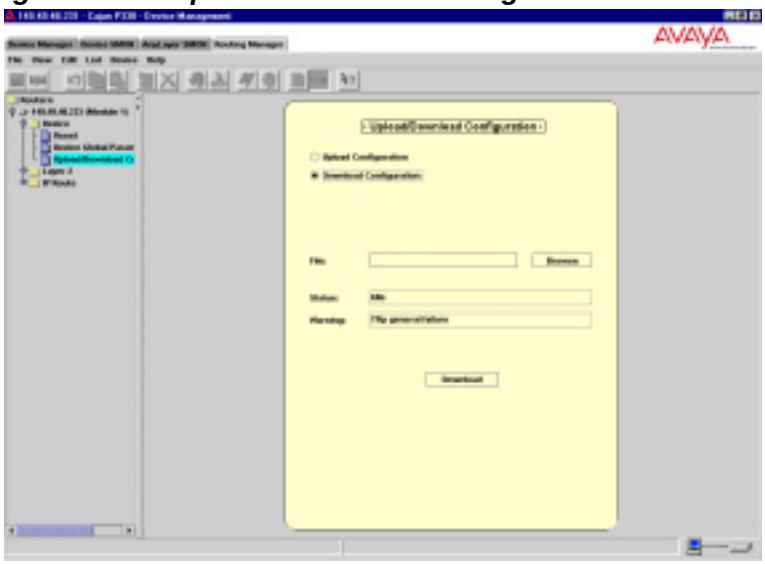
Upload/Download Configuration

The Upload/Download Configuration feature allows you to save the configuration of the router in a file, and to download a saved configuration to the router.

*** Note:** Only routing information is saved in this file.

To save or download routing parameters, select **Device > Upload/Download Configuration**. The Upload/Download Configuration window opens.

Figure 18-3. Upload/Download Configuration Window



Selecting TFTP Secure Mode

*** Note:** Selecting TFTP Secure Mode applies to Solaris only.

To limit the access of the TFTP client to a specified path on the disk, you must configure the TFTP Secure Mode and select a home directory. The TFTP Secure Mode configuration is required for both uploading and downloading configuration parameter files.

*** Note:** The Upload/Download Configuration feature uses TFTP. Ensure that the TFTP server is active before using this feature.

To activate TFTP Secure Mode:

1. Check the **Use TFTP Secure Mode** checkbox.
2. Enter the path of the home directory in the Homedir field.
3. Click **Set**.

*** Note:** The TFTP Secure Mode and the home directory must correspond to the TFTP configuration in the inetd.conf file.

Once TFTP Secure Mode is activated, it remains activated unless the TFTP parameter in the inetd.conf file is modified.

Uploading the Current Configuration to a File

To upload the current configuration to a file:

1. Select the **Upload Configuration** radio button.
2. In the File field, enter the name and path of the file into which you would like to save the current configuration.

   Or

   a. Click **Browse**. A file browser window appears.

   b. Select a folder using the browser.

   c. Enter a filename into the File name field.

   d. Click **Save**. The name of the selected file appears in the Upload field.

3. Click **Upload**. The current configuration is saved in the specified file.

Downloading a Saved Configuration to the Router

To download a saved configuration to the router:

1. Select the **Download Configuration** radio button.
2. In the File field, enter the file name from which you would like to download a configuration.

   Or

   a. Click **Browse**. A file browser window appears.

   b. Select a file using the browser.

   c. Click **Open**. The name of the selected file appears in the Download field.
3. Click **Download**. The specified configuration is downloaded to the router.

Upload/ Download Configuration Parameters

In addition, the following parameters are displayed.

Table 18-2. Upload/Download Configuration

Field	Description
Status	The status of the current upload or download operation.
Warnings	Non-fatal warnings issued by the router.

19 IP Route

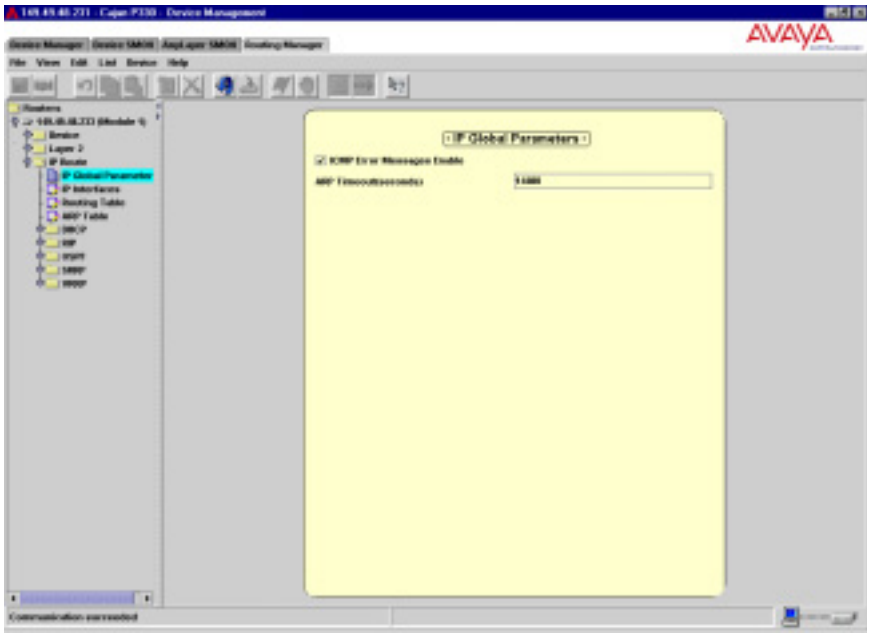
The IP Route folder provides access to the following windows:

- **IP Global Parameters**
- **IP Interfaces**
- **Routing Table**
- **ARP Table**
- **DHCP**
- **RIP**
- **OSPF**
- **SRRP**
- **VRRP**

IP Global Parameters

To display and update the IP global parameters, select **IP Route > IP Global Parameters**. The IP Global Parameters window opens.

Figure 19-1. IP Global Parameters Window



The following parameters are displayed:

Table 19-1. IP Global Parameters

Field	Description
ICMP Error Messages Enable	If checked, ICMP error messages should be sent. If not checked, ICMP error messages should not be sent.
ARP Timeout (seconds)	The number of seconds that may pass between ARP requests concerning entries in the ARP table. After this period, the entry is deleted from the table.

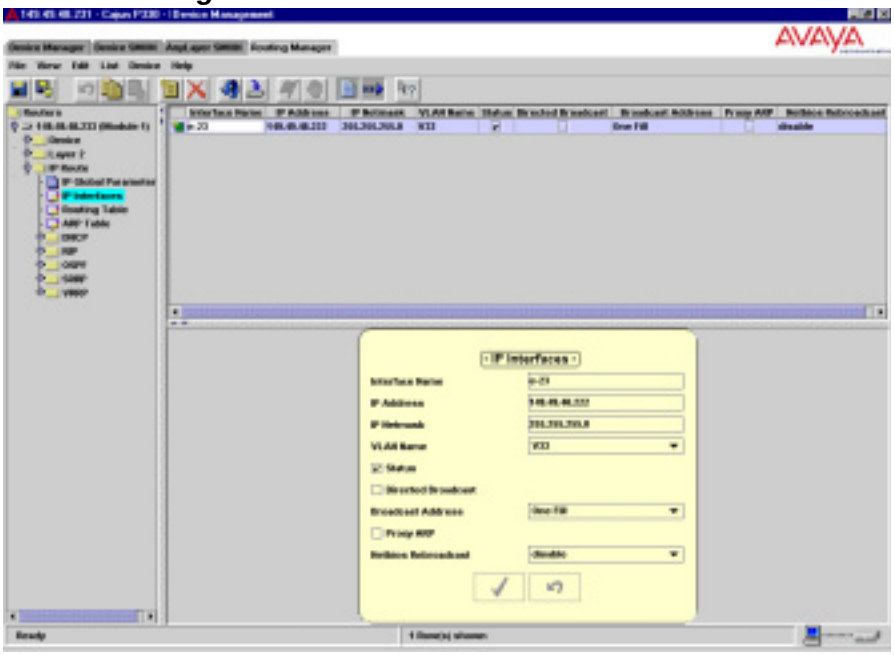
IP Interfaces

IP interfaces represent the logical connections of the device to the IP nets/subnets attached to it. Each IP interface corresponds to one net/subnet.

When you create a new IP interface, RIP and OSPF interfaces are automatically created and assigned enable status. When you delete an IP interface, the device deletes the associated RIP and OSPF interfaces.

To define and display the IP interfaces, select **IP Route > IP Interfaces**. The IP Interfaces window opens.

Figure 19-2. IP Interfaces WIndow



The following parameters are displayed:

Table 19-2. IP Interface Table Parameters

Field	Description
Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address assigned to the device on this subnet.
IP NetMask	The IP network mask of the attached net/subnet.
VLAN Name	The name of the Layer 2 interface with which this subnet is associated. Multiple subnets may be associated with a single VLAN, so multiple IP interfaces may be associated with the same If Name.

Table 19-2. IP Interface Table Parameters (Continued)

Field	Description
Status	The status of the IP interface. If checked, the IP interface is enabled.
Directed Broadcast	The status of the forwarding of incoming net-directed broadcasts to this interface. If checked, the forwarding is enabled. If not checked, IP directed broadcast messages destined to this interface will be discarded and will not be forwarded to this interface.
Broadcast Address	Determines the format of IP broadcast messages generated by the device. Possible formats are: • **One fill** - The host ID in the broadcast address is filled with 'one' bits (e.g., 149.49.50.255). • **Zero fill** - The host ID in the broadcast address is filled with 'zero' bits (e.g., 149.49.50.0).
Proxy ARP	If checked, the device will respond with its own MAC address to ARP requests for stations that are on another VLAN.
NetBios Rebroadcast	The state of NetBios Rebroadcast on this interface. Possible values are: • **both** - NetBios are rebroadcast both to and from this interface. • **disable** - NetBios are not rebroadcast to or from this interface.

You can create, modify, and delete IP interfaces. For more information on editing tables, refer to “Editing Tables” on page 101.

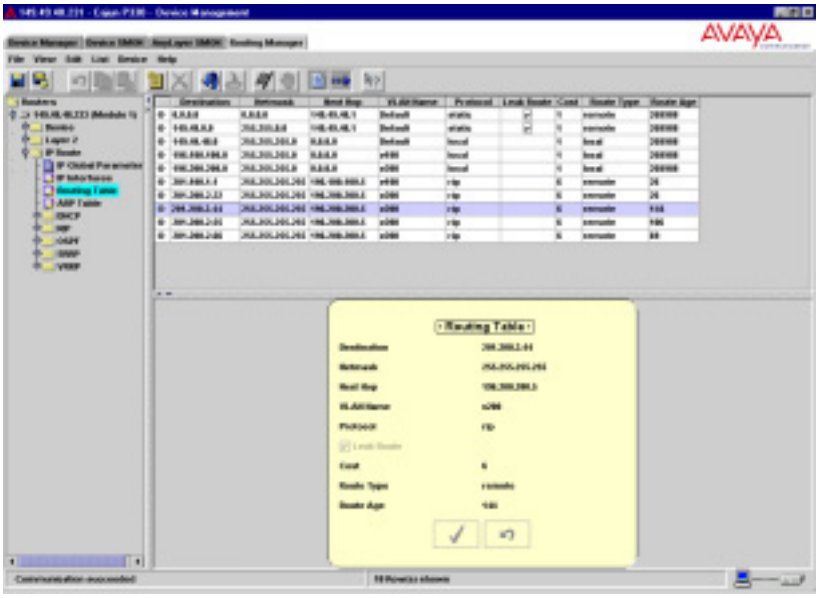
*** Note:** The IP Address, IP NetMask, If Name, and Status must be defined before creating an IP interface.

*** Note:** The list of VLANs allocated in the system is displayed in the If Name field.

Routing Table

To display and update the Routing Table, select **IP Route > Routing Table**. The Routing Table window opens.

Figure 19-3. Routing Table



The following parameters are displayed:

Table 19-3. Routing Table Parameters

Field	Description
Destination	The destination network IP address of this route. An IP address of 0.0.0.0 denotes a default router.
Netmask	The destination network mask of this route.
Next Hop	The address of the next router of this route, via which the destination of this route is reached.
VLAN Name	The logical name of the local interface through which the next hop of this route is reached.

Table 19-3. Routing Table Parameters (Continued)

Field	Description
Protocol	The protocol through which the route was learned. The following protocols can be specified: • **Static** - The route was manually configured to this device. • **Local** - The route represents a directly attached net/subnet and corresponds to one of the IP interfaces configured to this device. • **RIP** - The entry was learned from the RIP protocol. • **OSPF** - The entry was learned from the OSPF protocol.
Leak Route	If checked, static entries are advertised by RIP and OSPF. If unchecked, static entries are not advertised.
Cost	Number of hops to the destination network, or the cost of the route for OSPF routes.
Route Type	The type of route, either local or remote.
Route Age	The number of seconds since the route was last updated.

You can create, modify, or delete Routing Table static entries. For more information on editing tables, refer to “Editing Tables” on page 101.

*** Note:** Only static entries in the Routing Table can be modified. Entries learned from OSPF, RIP, or local cannot be modified.

You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click .

   Or

   Select **Device > Start Point**. The Start Point dialog box opens.

Figure 19-4. Routing Table Start Point Dialog Box

2. Enter an IP address in the Destination field.
3. Click **OK**. The Routing Table displays entries starting with the specified IP address.

To view all the entries in the Routing Table:

Click .

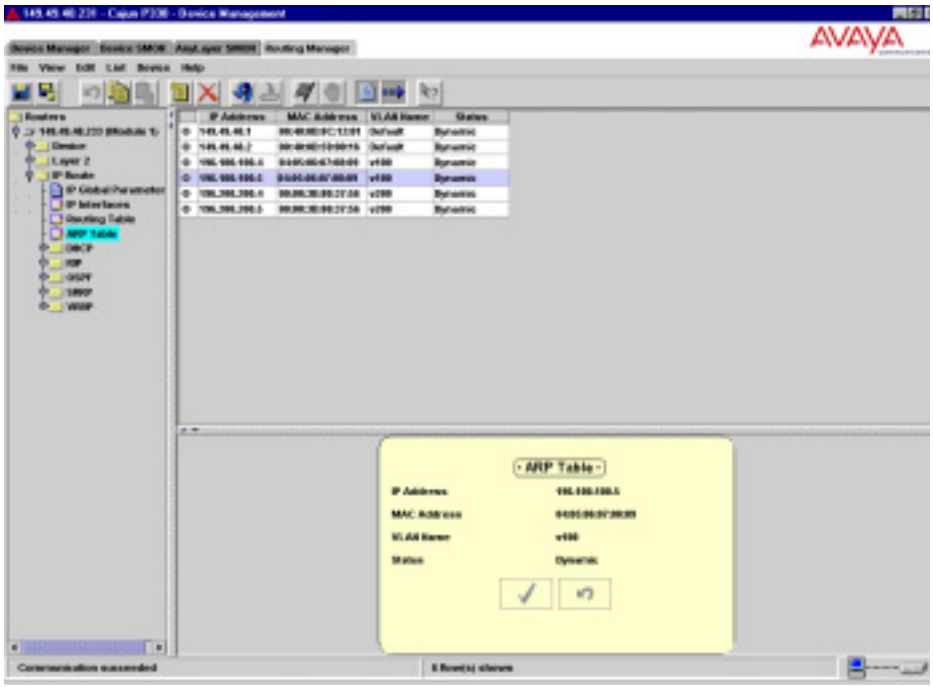
Or

Select **Device > Refresh from device**. All entries appear in the table.

ARP Table

To display and update the ARP Table parameters, select **IP Route > ARP Table**. The ARP Table window opens.

Figure 19-5. ARP Table Window



The following parameters are displayed:

Table 19-4. ARP Parameters

Field	Description
IP Address	The IP address of the station.
MAC Address	The MAC address of the station.
Description	The name of the interface.

Table 19-4. ARP Parameters (Continued)

Field	Description
Status	The status of the interface. Possible status values are: • **Dynamic** - The entry is learned from the ARP protocol. If the station entry is not active for a predetermined time, the entry is deleted from the table. • **Static** - The entry has been configured by the network management station and is permanent. • **Invalid** - The entry in the table is invalid.

You can create or delete ARP table entries. For more information on editing tables, refer to “Editing Tables” on page 101.

You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click .

   Or

   Select **Device > Start Point**. The Start Point dialog box opens.

Figure 19-6. ARP Table Start Point Dialog Box

2. Enter an IP address in the IP Address field.
3. Select an interface from the If Name listbox.
4. Click **OK**. The ARP Table displays entries starting with the specified IP address and interface.

To view all the entries in the ARP Table:

Click .

Or

Select **Device > Refresh from device**. All entries appear in the table.

DHCP

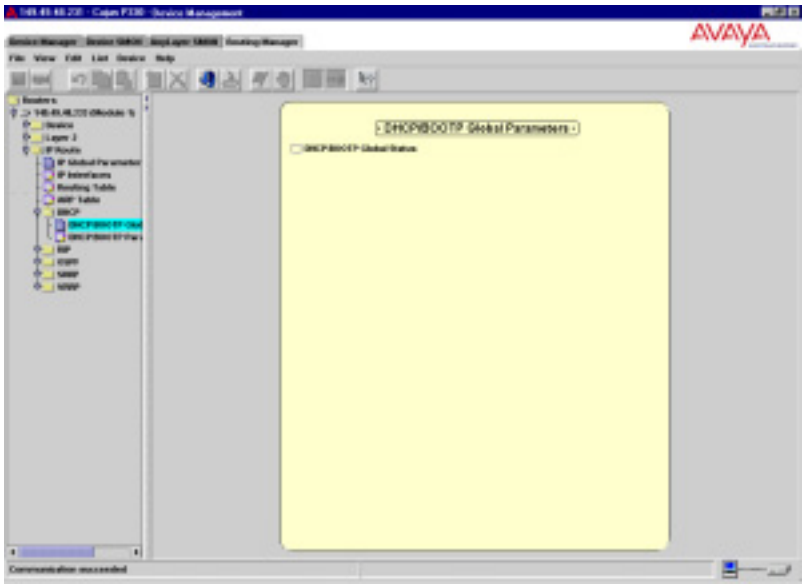
The DHCP folder provides access to the following windows:

- **DHCP/BOOTP Global Parameters**
- **DHCP/BOOTP Parameters**

DHCP/BOOTP Global Parameters

To display and update the DHCP/BOOTP global parameters, select **IP Route > DHCP > DHCP/BOOTP Global Parameters**. The DHCP/BOOTP Global Parameters window opens.

Figure 19-7. DHCP/BOOTP Global Parameters Window



The following parameter is displayed:

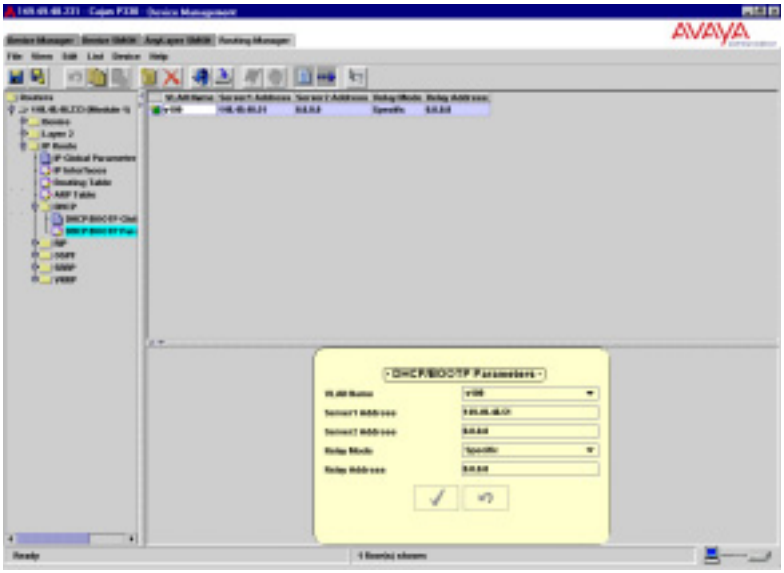
Table 19-5. DHCP/BOOTP Global Parameters

Field	Description
DHCP/BOOTP Global Status	If the DHCP/BOOTP Global Status checkbox is checked, DHCP/BOOTP is enabled according to the DHCP/BOOTP configuration of each interface. If it is not checked, DHCP/BOOTP relays over all interfaces are disabled.

DHCP/BOOTP Parameters

To display and update DHCP/BOOTP parameters, select **IP Route > DHCP > DHCP/BOOTP Parameters**. The DHCP/BOOTP Parameters window opens.

Figure 19-8. DHCP/BOOTP Parameters Window



The following parameters are displayed:

Table 19-6. DHCP/BOOTP Parameters

Field	Description
VLAN Name	The interface name upon which the clients are located.
Server1 Address	The IP address of the first of two possible DHCP servers for the interface.
Server2 Address	The IP address of the second of two possible DHCP servers for the interface.

Table 19-6. DHCP/BOOTP Parameters (Continued)

Field	Description
Relay Mode	The method by which the DHCP relay chooses an IP address to include in the DHCP request. When relaying a DHCP/BOOTP request, the relay has to write its own IP address into the relayed DHCP request. This address is used by the DHCP server to determine the subnet from which the client's IP address has been allocated. When the router has multiple IP addresses on the same VLAN, any of these addresses can be used when relaying DHCP requests. The Mode field controls the behavior of the DHCP relay in choosing the IP address to write into the DHCP request. Possible modes are: • **Default** - The router chooses one of the addresses itself. The address chosen will be the lowest IP address on that VLAN. • **Specific** - The router is configured with a single IP address to be used with all relayed requests arriving on the VLAN. This address must be one of the router's IP addresses on the specified VLAN. It must be entered in the Relay Address field.
Relay Address	One of the router's IP addresses on the VLAN. This is used for all relayed requests, if Mode is set to **Specific**.

You can create, modify, or delete DHCP/BOOTP parameters. For more information on editing tables, refer to "Editing Tables" on page 101.

RIP

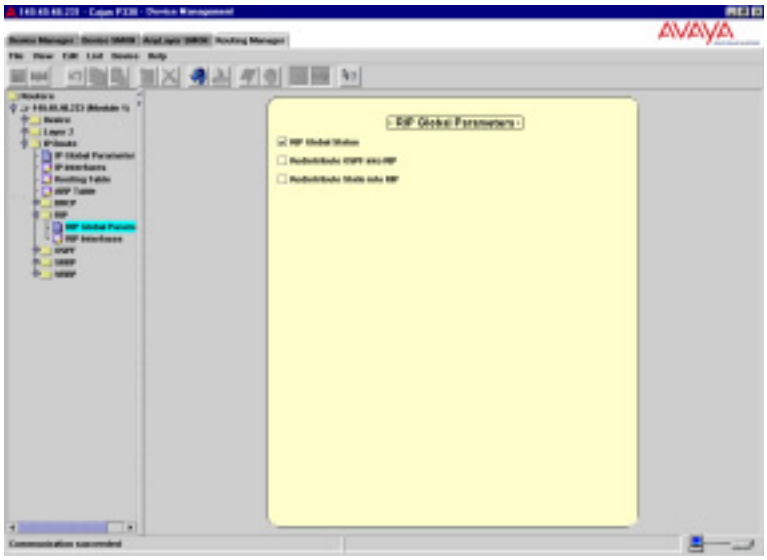
The RIP folder provides access to the following windows:

- **RIP Global Parameters**
- **RIP Interfaces**

RIP Global Parameters

To display and update RIP global parameters, select **IP Route > RIP > RIP Global Parameters**. The RIP Global Parameters window opens.

Figure 19-9. RIP Global Parameters Window



The following parameters are displayed:

Table 19-7. RIP Global Parameters

Field	Description
RIP Global Status	The status of RIP on the device. If checked, RIP is enabled. If not checked, RIP is disabled on all interfaces, regardless of the settings in the RIP Interfaces window.
Redistribute OSPF into RIP	Controls redistribution of routes from OSPF to RIP. If checked, all routes learned via OSPF are advertised into RIP.

Table 19-7. RIP Global Parameters (Continued)

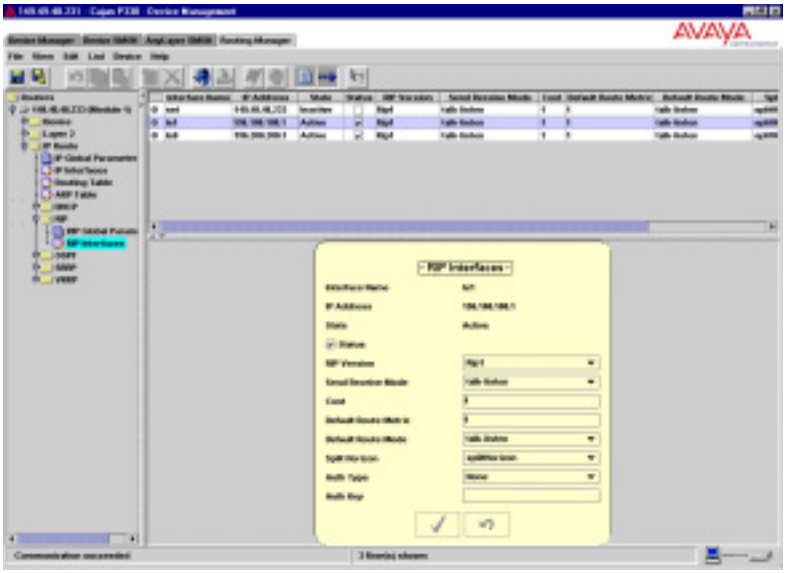
Field	Description
Redistribute Static into RIP	Controls redistribution of static routes into RIP. If checked, the static routes inserted into the IP Routing Table are advertised into RIP, according to the "Leak Route" definition for each static route.

You can modify RIP Global Parameters by checking boxes as desired.

RIP Interfaces

To define and display RIP interfaces, select **IP Route > RIP > RIP Interfaces**. The RIP Interfaces window opens.

Figure 19-10. RIP Interfaces Window



The following parameters are displayed:

Table 19-8. RIP Interface Parameters

Field	Description
Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address of the interface.
State	The operational status of the RIP interface - active or inactive.
Status	The administrative status of the RIP interface. If checked, the RIP interface status is enabled. If unchecked, it is disabled.

Table 19-8. RIP Interface Parameters (Continued)

Field	Description
RIP Version	The router can be configured to operate either RIP version 1 or RIP version 2 on each IP interface. The configuration of the RIP version must be consistent on each subnet. That is, all routers should be configured with the same RIP version on their interface to the subnet. When possible, homogeneous configuration of the RIP version in the network is recommended. • **RIP1** - The router runs regular RIP on that interface, following the RIP version 1 subnet aggregation rules. That is, it advertises an aggregate route for the net as opposed to advertising subnet routes across the network boundary. • **RIP2** - The router runs RIP version 2 on that interface. RIP version 2 advertisements are sent as multicast rather than broadcast. No route aggregation is done in RIP version 2. RIP version 2 allows for Variable Length Subnets Masks (VLSM), meaning that subnets of the same net may have masks of different lengths, and may be of different sizes.
Send Receive Mode	What the device sends on this interface. Values are: • **talk-listen** - RIP updates contain the entire routing table. • **listen-only** - No RIP updates are sent. • **talkDefault-listen** - RIP updates contain only a single entry. This advertises the router as the default router.
Cost	The cost of using this interface. RIP chooses the route with the lowest total cost (metric) for each destination.
Default Route Metric	The metric of the default route entry in RIP updates originated on this interface, if configured to **SendDefaultOnly**.
Default Route Mode	If **talk-listen**, accepts default route entries in RIP messages received from other routes on this interface. If **talk-only**, does not accept default route entries in RIP messages received from other routes on this interface.

Table 19-8. RIP Interface Parameters (Continued)

Field	Description
Split Horizon	The method for handling routes learned from this interface, when sending updates to this interface. Possible methods are: • **Poisoned Reverse** - The routes are advertised to this interface as unreachable. • **Split Horizon** - The routes are not advertised to this interface at all. • **None** - The routes are advertised to this interface as is.
Auth Type	Authentication Type. Possible methods are: • **None** • **Simple**
Auth Key	The password for this interface. This is only used if the Auth Type is set to **Simple-password**. The password may contain up to 16 characters. It may be configured here, but not viewed.

*** Note:** In the Send field, selecting '**listen-only**' or '**talk-listen**' will prevent updating the Default Route Metric field.

You can modify RIP interfaces. For more information on editing tables, refer to "Editing Tables" on page 101.

OSPF

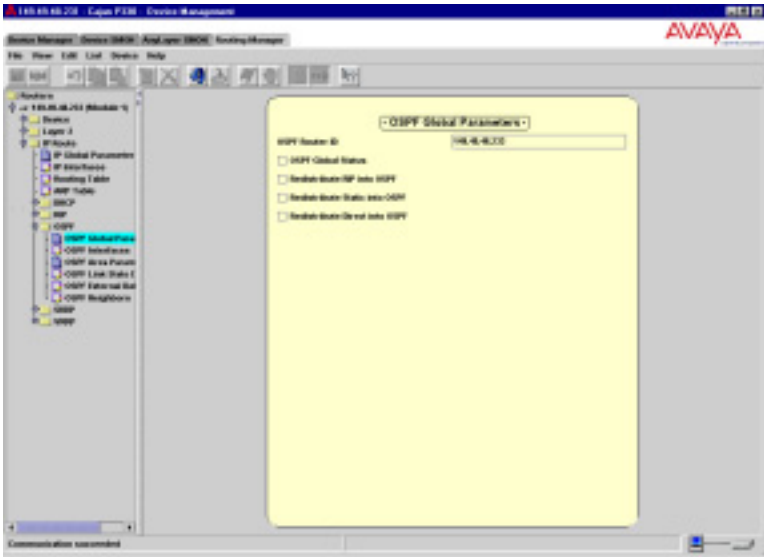
The OSPF folder provides access to the following windows:

- **OSPF Global Parameters**
- **OSPF Interfaces**
- **OSPF Area Parameters**
- **OSPF Link State Database**
- **OSPF External Database**
- **OSPF Neighbors**

OSPF Global Parameters

To define and display OSPF Global parameters, select **IP Route > OSPF > OSPF Global Parameters**. The OSPF Global Parameters window opens.

Figure 19-11. OSPF Global Parameters Window



The following parameters are displayed:

Table 19-9. OSPF Global Parameters

Field	Description
OSPF Router ID	The ID number of the router. The router ID must be unique. By default, the router ID equals one of the router's IP addresses.

Table 19-9. OSPF Global Parameters (Continued)

Field	Description
OSPF Global Status	The administrative status of OSPF in the router. If not checked, OSPF is not active on any interface, regardless of the settings in the OSPF Interfaces window.
Redistribute RIP into OSPF	Controls redistribution of routes from RIP to OSPF. If checked, all routes learned via RIP are advertised into OSPF as external routes.
Redistribute Static into OSPF	Controls redistribution of static routes into OSPF. If checked, routes are advertised into OSPF as external routes, according to the "Leak Route" definition for each static route.
Redistribute Direct into OSPF	Controls redistribution of direct routes which are external to OSPF. If checked, local subnets on which OSPF is disabled are advertised into OSPF as external routes.

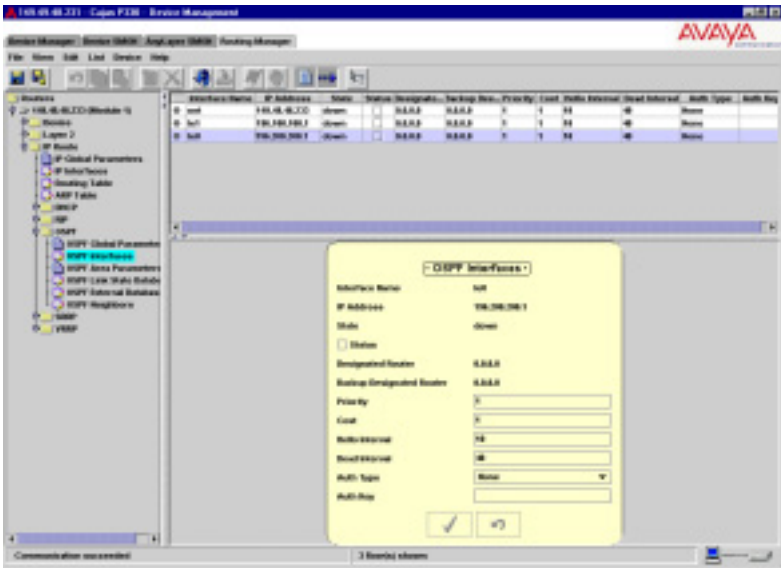
You can modify OSPF Global Parameters.

*** Note:** After updating the Router ID field, a message is displayed warning that the operation might cause the OSPF database to reset.

OSPF Interfaces

To define and display OSPF interfaces, select **IP Route > OSPF > OSPF Interfaces**. The OSPF Interfaces window opens.

Figure 19-12. OSPF Interfaces Window



The following parameters are displayed:

Table 19-10. OSPF Interfaces

Field	Description
Interface Name	The name assigned to the selected IP interface.
IP Address	The IP address of this OSPF interface.
State	The interface state of the OSPF interface: • **Down** - OSPF is not active on the interface. • **Waiting** - The identity of the designated router for this subnet is not yet determined. • **Designated Router** - This router is the Designated Router on this subnet. • **Backup Designated Router** - This router is the Backup Designated Router. • **Other Designated Router** - Another router is the Designated Router on this subnet.
Status	If checked, this denotes that the interface may form neighbor relationships, and that the interface is advertised as an internal route to OSPF. If not checked, the interface is external to OSPF.
Designated Router	The IP Address of the designated router.
Backup Designated Router	The IP Address of the backup designated router.

Table 19-10. OSPF Interfaces (Continued)

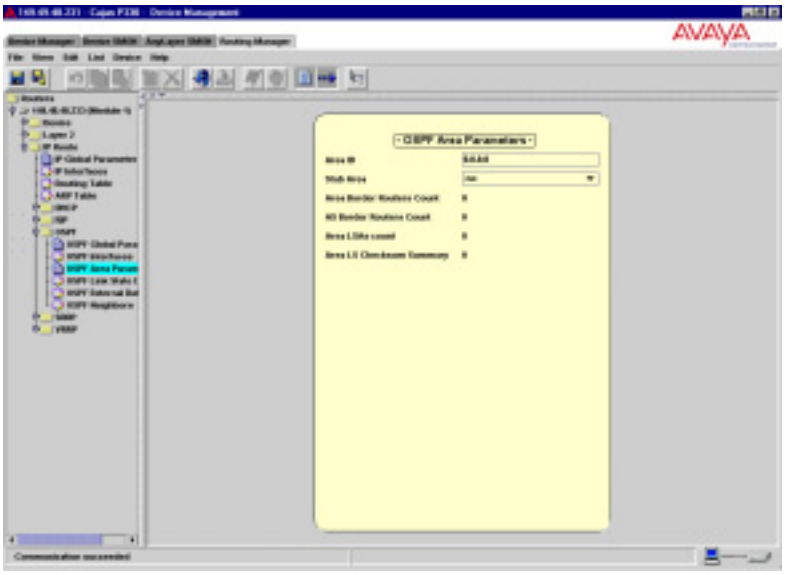
Field	Description
Priority	The priority of this router to become the designated router on this interface. A value of zero indicates that this router is not eligible to become the designated router on the current network. If more than one router has the same priority, then the router ID is used.
Cost	The cost of using this interface. OSPF will choose the route with the lowest total cost (metric) to each destination.
Hello Interval	The period of time (in seconds) between Hello packets. All routers attached to a common network must have the same Hello Interval.
Dead Interval	The period of time (in seconds) that a router's Hello packets have not been seen before the router's neighbors declare the router down. All routers attached to a common network must have the same Dead interval.
Auth Type	Authentication Type. Possible methods are: • **None** • **Simple**
Auth Key	The password for this interface. This is only used if the Auth Type is set to **Simple-password**. The password may contain up to 8 characters. It may be configured here, but not viewed.

You can modify OSPF interfaces. For more information on editing tables, refer to "Editing Tables" on page 101.

OSPF Area Parameters

To define and display OSPF Area Parameters, select **IP Route > OSPF > OSPF Area Parameters**. The OSPF Area Parameters window opens.

Figure 19-13. OSPF Area Parameters Window



The following parameters are displayed:

Table 19-11. OSPF Area Parameters

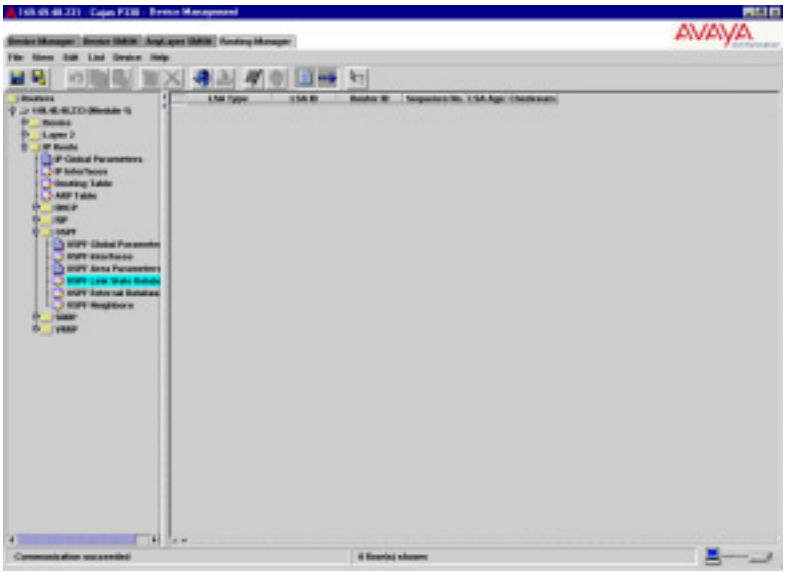
Field	Description
Area ID	A unique number identifying the OSPF area to which this router belongs. Area ID 0.0.0.0 is used for the OSPF backbone.
Stub Area	If checked, external link-state advertisements are not imported into the area.
Area Border Routers Count	The total number of Area Border Routers reachable within this area. This number is initially zero and is calculated in each OSPF pass.
AS Border Routers Count	The total number of Autonomous System border routers reachable within this area. This number is initially zero and is calculated with each SPF pass.
Area LSAs Count	The number of link-state advertisements in the link-state database.
Area LS Checksum Summary	The sum of LS checksums of LS advertisements contained in the LS database. Use this sum to determine if there has been a change in a router's LS database, and to compare the LS database of two routers.

You can modify OSPF Area parameters.

OSPF Link State Database

To display the OSPF Link State Database, select **IP Route > OSPF > OSPF Link State Database**. The OSPF Link State Database window opens.

Figure 19-14. OSPF Link State Database Window



The following parameters are displayed:

Table 19-12. OSPF Link State Database Window

Field	Description
LSA Type	The type and format of the link state advertisement; for example, Router links and Network links.
LSA ID	Identifies the part of the routing domain that is described by the advertisement. The LSA ID can be either a router ID or an IP address.
Router ID	Identifies the originating router in the autonomous system.
Sequence No.	The sequence number of the link state advertisement. Use this parameter to detect old and duplicate link state advertisements. The larger the sequence number, the more recent the advertisement. Note that the sequence number is usually negative.
LSA Age	The age of the link state advertisement (in seconds).
Checksum	This parameter is a checksum of the complete contents of the advertisement, not including the Age value.

The parameters in the OSPF Link State Database window are read-only.

You can limit the table entries displayed. To start the display of entries from a specified interface and IP address:

1. Click .

   Or

   Select **Device > Start Point**. The Start Point dialog box opens.

Figure 19-15. OSPF Link State Database Start Point Dialog Box

2. Select an LSA Type from the LSA Type listbox.
3. Click Start. The OSPF Link State Database displays entries starting with the specified LSA Type.

To view all the entries in the OSPF Link State Database:

Click .

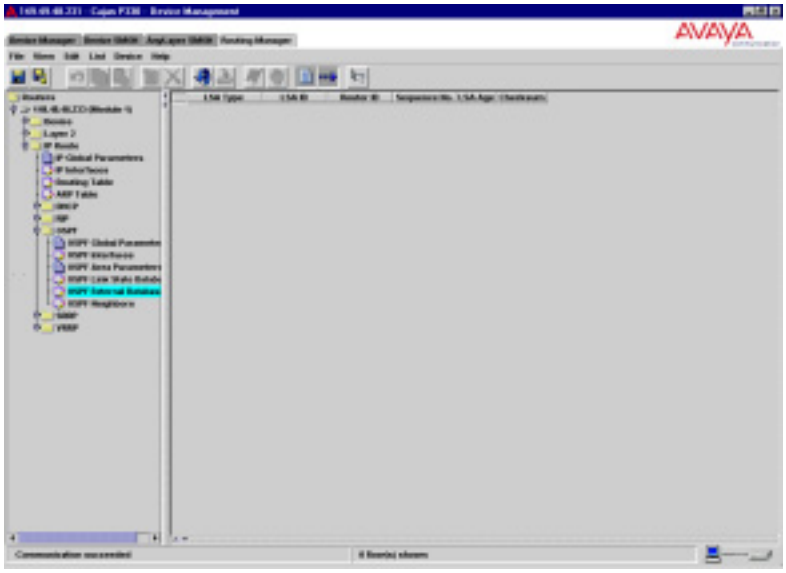
Or

Select **Device > Refresh from device**. All entries appear in the table.

OSPF External Database

To display the OSPF External Database window, select **IP Route > OSPF > OSPF External Database**. The OSPF External Database window opens.

Figure 19-16. OSPF External Database Window



The following parameters are displayed:

Table 19-13. OSPF External Database Window

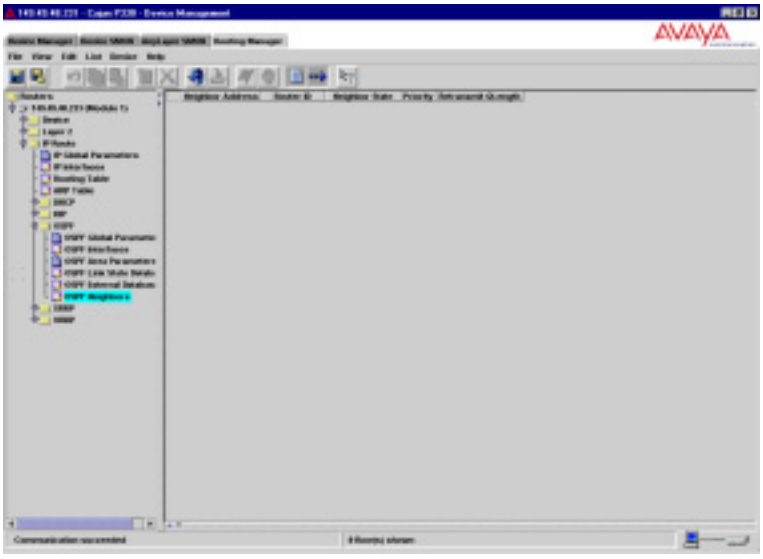
Field	Description
LSA Type	The type and format of the link state advertisement; for example, Router links and Network links.
LSA ID	Identifies the part of the routing domain that is described by the advertisement. The LSA ID can be either a router ID or an IP address.
Router ID	Identifies the originating router in the autonomous system.
Sequence No.	The sequence number of the link state advertisement. Use this parameter to detect old and duplicate link state advertisements. The larger the sequence number, the more recent the advertisement. Note that the sequence number is usually negative.
LSA Age	The age of the link state advertisement (in seconds).
Checksum	This parameter is a checksum of the complete contents of the advertisement, not including the Age value.

The parameters in the OSPF External Database window are read-only.

OSPF Neighbors

To display the OSPF Neighbors window, select **IP Route > OSPF > OSPF Neighbors**. The OSPF Neighbors window opens.

Figure 19-17. OSPF Neighbors Window



The following parameters are displayed:

Table 19-14. OSPF Neighbors Parameters

Field	Description
Neighbor Address	The IP address of this neighbor.
Router ID	The unique OSPF identifier for the neighboring router.
Neighbor State	The state of the relationship with this neighbor: • **Down** • **Attempt** • **Init** • **Two Way** • **Exchange Start** • **Exchange** • **Loading** • **Full**
Priority	The priority of this neighbor in the Designated Router election.
Retransmit QLength	The current length of the retransmission queue.

The parameters in the OSPF Neighbors Table window are read-only.

SRRP

The SRRP folder provides access to the following windows:

- **SRRP Global Parameters**
- **SRRP Table**

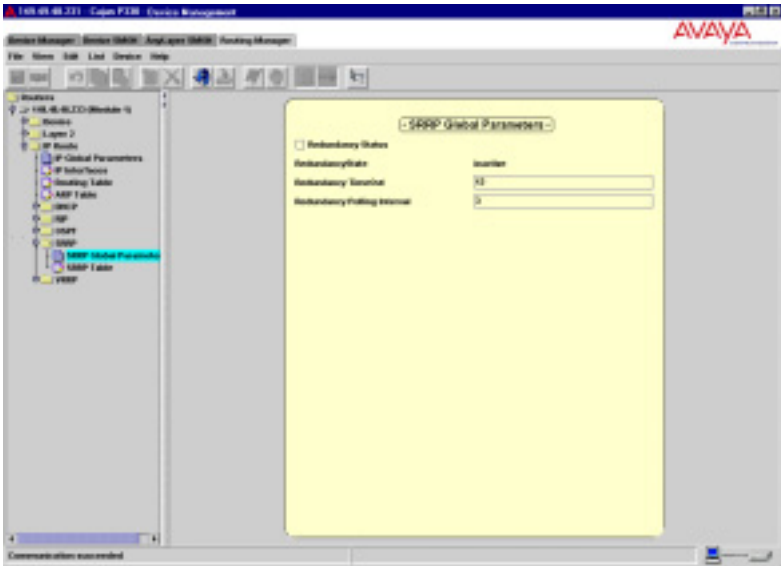
SRRP Global Parameters

SRRP (Simple Router Redundancy Protocol) provides a method for configuring a redundancy between routers. A router can be assigned a backup router. The backup router functions normally, while checking the primary router. If the primary router fails, the backup router handles traffic directed to the primary router.

*** Note:** SRRP and VRRP are mutually exclusive.

To define and display SRRP Global Parameters, click the select **IP Route > SRRP > SRRP Global Parameters**. The SRRP Global Parameters window opens.

Figure 19-18. SRRP Global Parameters Window



The following parameters are displayed:

Table 19-15. Redundancy Global Parameters

Field	Description
Redundancy Status	If checked, enables IP Redundancy as configured in the IP Redundancy Table window.
RedundancyState	When the IP Redundancy Status is enabled, the state of the backup router may be inactive or active. • If checked, the backup router detected the failure of the main router and is currently forwarding traffic in its place. It answers ARP requests for the main router, providing its own MAC address. While the Redundancy State is active, the backup router continues to poll the main router to check for recovery. • If unchecked, no special function is performed by the secondary router except polling the main router. While the main router is operational, the Redundancy State remains inactive.
Redundancy TimeOut	The interval in seconds during which the main router must signal. If the main router does not signal within this interval, it is considered not operational.

Table 19-15. Redundancy Global Parameters (Continued)

Field	Description
Redundancy Polling Interval	The polling interval for this router, in seconds. If the interval is zero, then the router is not polled.

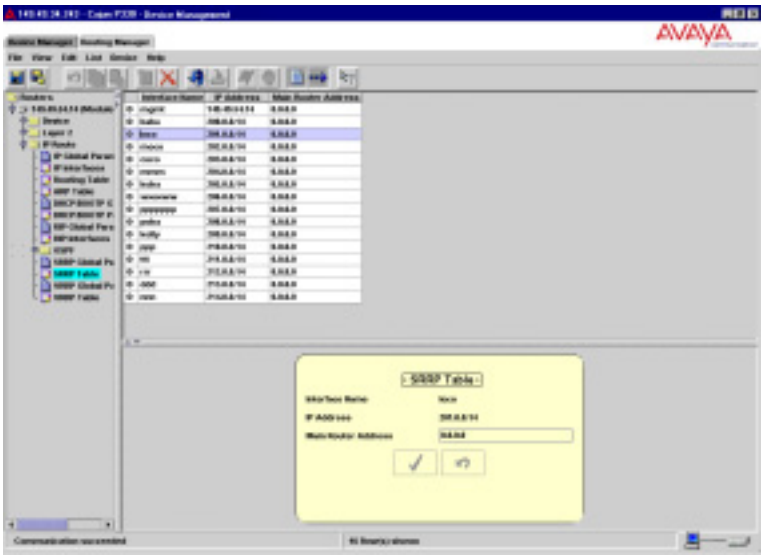
You can modify the Redundancy Global Parameters except for Redundancy State.

SRRP Table

In order for this device to back up the main router, the IP addresses of the main router must be configured in this window. This window contains an entry for each of the device's IP interfaces. The corresponding IP address of the main router must be configured in each entry that represents a subnet common to this device and the main router. Entries cannot be deleted or added. Entries that do not specify an IP address of the main router do not participate in the redundancy function.

To define and display SRRP Parameters, select **IP Route > SRRP > SRRP Table**. The SRRP Table window opens.

Figure 19-19. SRRP Window



The following parameters are displayed:

Table 19-16. SRRP Parameters

Field	Description
Interface Name	The IP interface.
IP Address	The IP addresses of this device identifying the IP interface.
Main Router Address	The IP address of the main router to be polled and backed up. 0.0.0.0 denotes that the redundancy feature does not operate on this interface.

You can modify SRRP parameters. For more information on editing tables, refer to “Editing Tables” on page 101.

VRRP

The VRRP folder provides access to the following windows:

- **VRRP Global Parameters**
- **VRRP Table**

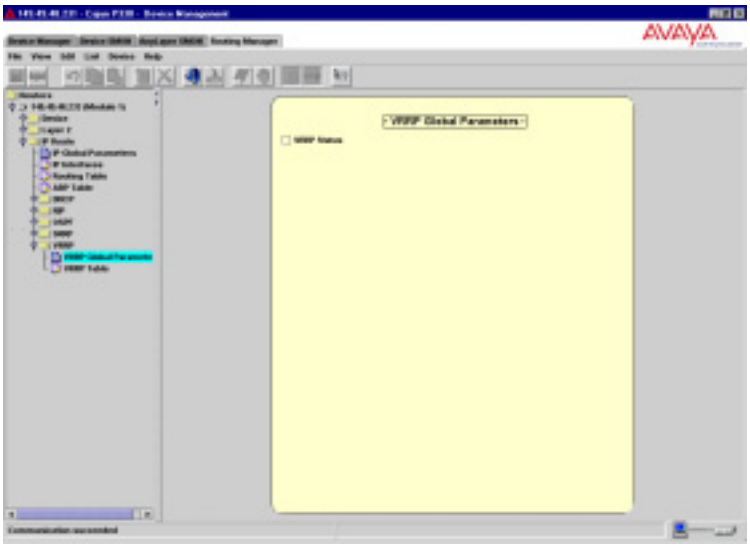
VRRP Global Parameters

VRRP (Virtual Router Redundancy Protocol) provides a method for configuring a redundancy between routers. A Master Router is selected for each Virtual Router. Backup routers function normally, while checking the Master Router. If the Master Router fails, the backup routers handle traffic directed to the Master Router.

*** Note:** VRRP and SRRP are mutually exclusive.

To define and display the VRRP global parameters, select **IP Route > VRRP > VRRP Global Parameters**. The VRRP Global Parameters window opens.

Figure 19-20. VRRP Global Parameters Window



The following parameter is displayed:

Table 19-17. VRRP Global Parameter

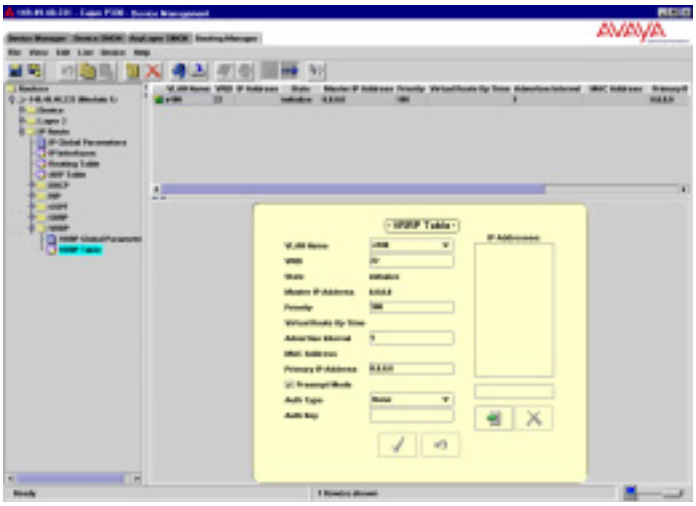
Field	Description
VRRP Status	When the VRRP global parameter checkbox is checked, VRRP is operational on the router. If unchecked, VRRP is not operational on the router.

You can modify the VRRP Global Parameter.

VRRP Table

To define and display the VRRP table, select **IP Route > VRRP > VRRP Table**. The VRRP table appears.

Figure 19-21. VRRP Table



The following parameters are displayed:

Table 19-18. VRRP Table Parameters

Field	Description
VLAN Name	The name of the selected interface.
VRID	A number which, along with an interface index (ifIndex), serves to uniquely identify a virtual router on a given VRRP router. A set of one or more associated addresses is assigned to a VRID.
IP Addresses	The IP addresses associated with this virtual router. The IP addresses must be on a local subnet on the VLAN.
State	The state of the virtual router. Possible states are: • **initialize** - The virtual router is not functional. • **backup** - The virtual router is monitoring the availability of the master router. • **master** - The virtual router is forwarding packets with IP addresses associated with this virtual router.
Master IP Address	The IP address of the physical router currently acting as the Virtual Router's Master Router.

Table 19-18. VRRP Table Parameters (Continued)

Field	Description
Priority	This object specifies the priority to be used for the virtual router master election process. Higher values imply higher priority. A priority of '0', although not settable, is sent by the master router to indicate that this router has ceased to participate in VRRP and a backup virtual router should transition to become a new master. A priority of 255 is used for the router that owns the associated IP address(es).
Virtual Route Up Time	The time when the virtual router's state changed from initialized to backup or master. The time is expressed in ticks (1/60 of a second).
Advertise Interval	The interval, in seconds, between VRRP advertisement messages sent by the master router.
MAC Address	The virtual MAC address of the virtual router.
Primary IP Address	The physical router's IP address to be used if it is elected to be Master Router. The Primary IP Address must belong to the physical router and be on the selected VLAN. If this parameter is set to 0.0.0.0, the IP address which is numerically lowest will be selected.
Preempt Mode	If checked, the virtual router with the highest priority will preempt active routers and become the master router.
Auth Type	Authentication Type. Possible methods are: • **None** • **Simple**
Auth Key	The password for this interface. This is only used if the Auth Type is set to **Simple**. The password may contain up to 8 characters. It may be configured here, but not viewed.

You can modify VRRP parameters. For more information on editing tables, refer to "Editing Tables" on page 101.

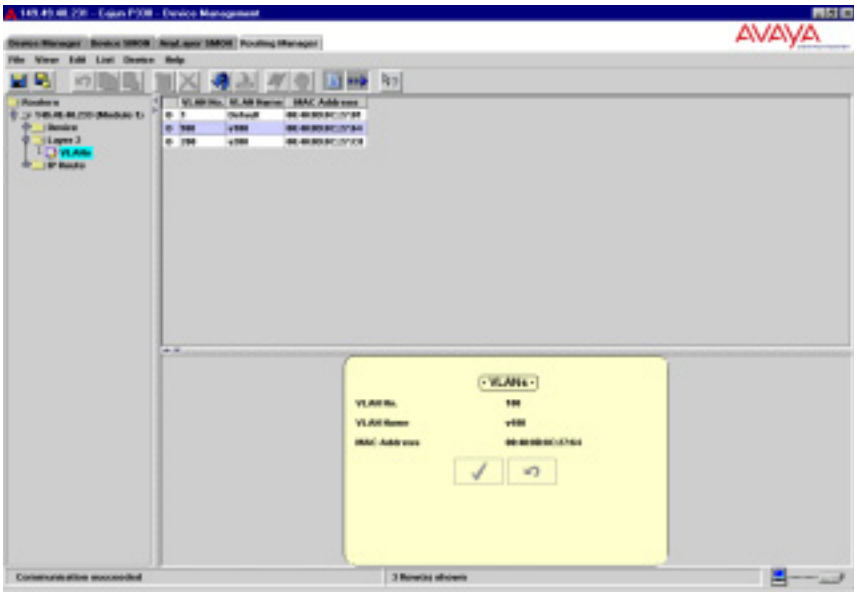
20 Layer 2

The Layer 2 folder provides access to the following window provides information about displaying VLANs.

VLANs

To display the layer 2 interfaces, select **Layer 2 > VLANs**. The VLANs window opens.

Figure 20-1. VLANs Window



The following parameters are displayed:

Table 20-1. VLANs Window Parameters

Field	Description
VLAN No.	The VLAN number of this VLAN.
VLAN Name	The logical name of this VLAN.
MAC Address	The MAC address of this VLAN.

The fields in the VLANs window are read-only.

21 EZ2route

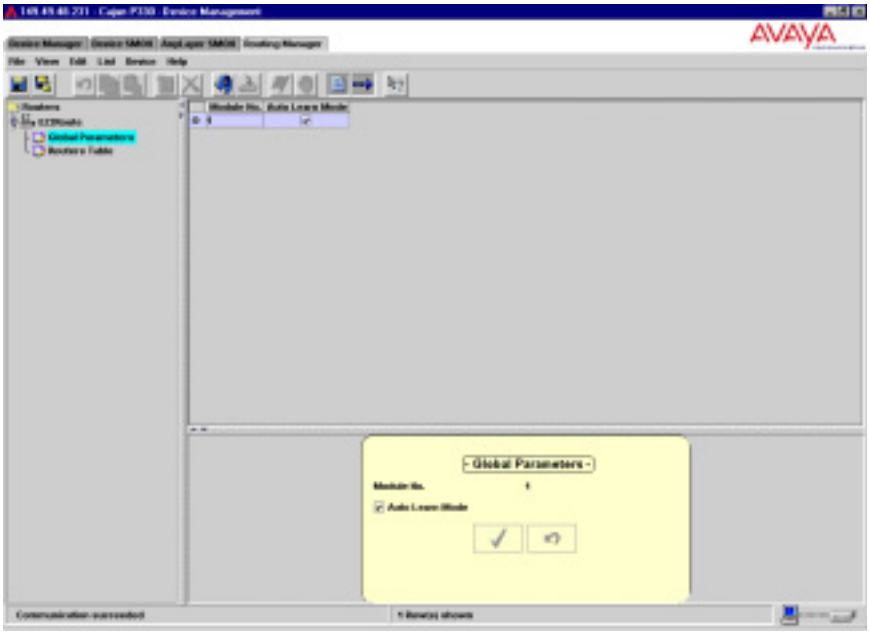
The EZ2route folder provides access to the following windows:

- **Global Parameters**
- **Routers Table**

Global Parameters

To display and update the global parameters, select **EZ2Route > Global Parameters**. The Global Parameters window opens.

Figure 21-1. Global Parameters Window



The following parameters are displayed:

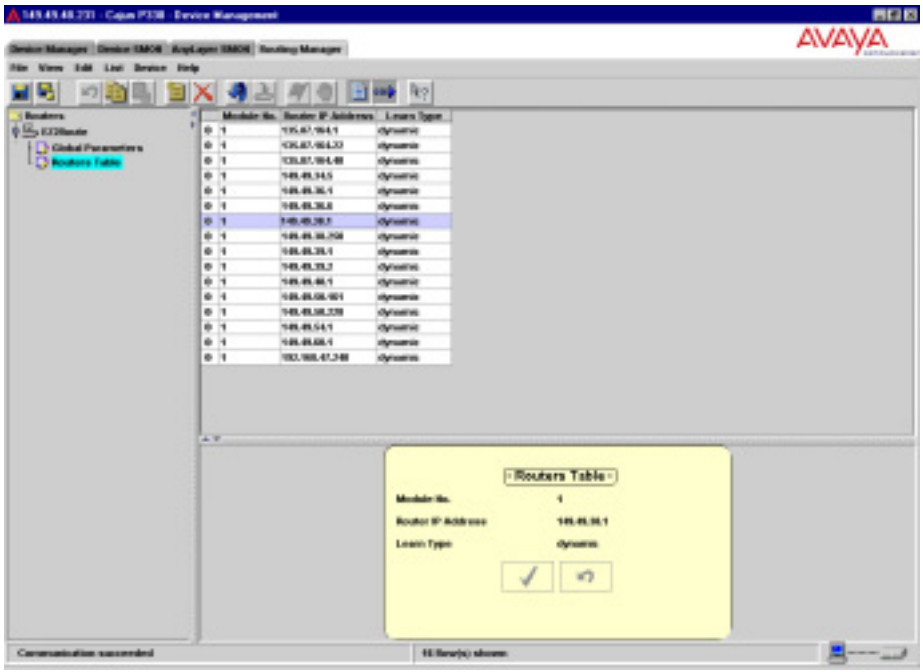
Table 21-1. Global Parameters

Field	Description
Module No.	The number of the module in the device.
Auto Learn Mode	The Auto Mode status of the module. If checked, the module automatically learns the routers in the network. If not checked, the module does not learn the routers in the network. Only routers entered manually are boosted.

Routers Table

To define and display a table of routers boosted by the EZ2route modules, select **EZ2Route > Routers Table**. The Routers Table opens.

Figure 21-2. Routers Table



The following parameters are displayed:

Table 21-2. Routers Table Parameters

Field Name	Description
Module No.	The number of the module in the device.
Router IP Address	The IP address of the router being boosted by the EZ2route module.
Learn Type	The method by which the router was learned by the EZ2route module. Possible methods are: • **Dynamic** - The route was learned dynamically. • **Static** - The route was entered manually.

You can create, modify and delete static entries in the Routers Table. For more information on editing tables, refer to “Editing Tables” on page 101.

A Menus

This appendix gives the full structure of the menus in the Cajun P330 Management Application.

Device Manager Menus

This section provides the menu structure of the Cajun P330 Device Manager.

File Menu

Table A-1. File Menu - Device Manager

Item	Description
Refresh	Refreshes the display with information from the device.
Change IP (for Standalone Manager only)	Opens the Device Parameters dialog box for selecting a different device to manage.
Exit	Exits the Cajun P330 Manager.

View Menu

Table A-2. View Menu - Device Manager

Item	Description
Configuration	Switches the Device Manager to configuration mode.
Port RMON	Switches the Device Manager to monitoring mode.
Power Over Ethernet	Enables viewing ports that are providing power to IP telephones.

Actions Menu

Table A-3. Actions Menu - Device Manager

Item	Description
Device Information	Displays information for the device.
Virtual LANs	Displays and enables configuration of VLANs.
Link Aggregation	Displays and enables configuration of LAGs.
Port Redundancy	Displays and enables configuration of port redundancies.
Port Mirroring	Allows copying of all transmitted and received packets from one port to another.
Trap Managers	Displays managers and traps configuration information.
Switch Connected Addresses	Displays a list of stations connected to each of the device's ports.
Port Security	Displays the Port Security configuration window.
LEC Information	Displays a list of LECs attached to an ATM Uplink expansion module.
VoIP Configuration	Opens the VoIP config tab of the VoIP Engine Dialog box.
Reset Device	Resets the entire device.
Reset Module(s)	Resets the selected modules.
Reset MM(s)	Reset the selected media modules.

Help Menu

Table A-4. Help Menu - Device Manager

Item	Description
Contents	Opens the on-line help contents page.
About Cajun P330 Device Manager	Copyright information about the Cajun P330 Device Manager.

Routing Manager Menus

This section provides the menu structure of the Cajun P330 Routing Manager.

File Menu

Table A-5. File Menu - Routing Manager

Item	Description
Save	Saves the current table to a text file.
Commit	Saves the current configuration to the router.

View Menu

Table A-6. View Menu - Routing Manager

Item	Description
Form	Toggles the display of a form corresponding to the current table.
More	Toggles the display of additional table parameters.

Edit Menu

Table A-7. Edit Menu - Routing Manager

Item	Description
Undo	Undoes changes made to the table or form currently displayed.
Copy	Copies the selected information to the clipboard.
Paste	Pastes information from the clipboard into the selected table row.

List Menu

Table A-8. List Menu - Routing Manager

Item	Description
New	Adds a row to the table.
Delete	Deletes the selected table row.

Device Menu

Table A-9. Device Menu - Routing Manager

Item	Description
Send to device	Sends the configuration information to the device.
Refresh from device	Refreshes the current table or form with information from the device.
Stop	Stops loading information into the current table.
Start point	Opens the Start Point dialog box for specifying the starting point of entries displayed in the table.

Help Menu

Table A-10. Help Menu - Routing Manager

Item	Description
Help	Opens the on-line help for information.

B Web Management

This appendix provides instructions for managing Cajun P330 Devices via the Internet and contains the following topics:

- **Web Management Overview** - An overview on Web Management.
- **Configuring the Cajun P330 Device** - Instructions on how to configure the Cajun P330 Device for the first time.

Web Management Overview

Web Management provides a simple method of managing Cajun P330 Devices via the Internet. The Cajun P330 Manager software does not need to be installed on your computer.

Instead, a small plug-in for your web browser activates the embedded manager software. This plug-in loads automatically when you use Web Management.

*** Note:** Port RMON is not available via Web Management.

On-line help is only available if you have installed the on-line help on your network and configured the Cajun P330 Device with the location of the help files. For information on installing the on-line help and configuring the device with the location of the files, refer to the *Cajun P330 User's Guide*.

Configuring the Cajun P330 Device

When a Cajun P333R module is initially configured as a full router, it must be assigned an IP address. The IP address must be assigned using the CLI (Command Line Interface) setup screens. For information on assigning an IP address to the router module, refer to the *Cajun P330 User's Guide*.

C Configuration Fields

Field	Description
Administrative Status	The state of the selected port, ports, or ports in the selected LAG: • **Enabled** - The port is enabled and can transmit and receive packets. • **Disabled** - The port is disabled and cannot transmit or receive packets.
Auto Negotiation Mode	The configured state of the Auto-Negotiation protocol between two stations. When enabled, Auto-Negotiation detects the highest common denominator for communication between endstations, and sets both to the same highest common setting. It also delivers remote link status. For 10BaseT and 100BaseT ports, Auto-Negotiation determines the speed and Duplex Mode of communication between the endstations. For Gigabit ports, Auto-Negotiation determines the Flow Control setting of the ports. For more information, refer to *Auto-Negotiation* in *The Reference Guide.*
Auto Negotiation Status	The operational state of the Auto-Negotiation protocol between two stations. Possible statuses are: • **Pass** - The Auto-Negotiation protocol is enabled and a common protocol has been established. • **In progress** - The Auto-Negotiation protocol is in the process of detecting the communication capabilities of the endstations and setting them to the highest common denominator. • **Fail** - The Auto-Negotiation protocol was not able to detect the communication capabilities of the end station, or was unable to set them to the highest common denominator. • **Disabled** - The Auto-Negotiation protocol is disabled.

Field	Description
BUPS Module CS	The version of the BUPS (BackUp Power Supply) module. The version is updated whenever there is a functional modification to the module.
BUPS Module Type	The type of BUPS (BackUp Power Supply) module in the selected module.
Cascade Down Monitoring	Determines if the devices in the system are monitored cascading down. The possible values are: • **Enable** - Monitors devices in the network cascading down. If the connection is lost, the system reports a error. • **Disable** - Does not monitor devices in the network cascading down. If the connection is lost, the system does not reports a error.
Cascading CS	The version of the cascading module. The version is updated whenever there is a functional modification to the module.
Cascading Type	The type of cascading module in the selected module. The cascading module is needed to connect modules in the device.
Cascading Up Monitoring	Determines if the devices in the system are monitored cascading up. The possible values are: • **Enable** - Monitors devices in the network cascading up. If the connection is lost, the system reports a error. • **Disable** - Does not monitor devices in the network cascading up. If the connection is lost, the system does not reports a error.
Configuration Symbol	The version of the module. The version is updated whenever there is a functional modification to the module.
Contact	Individual responsible for maintenance of the device.
Delay Time	The amount of time (in seconds) the device waits from receiving a request for a new IP Multicast session until IP Multicast filtering begins. This time allows other hosts to report to the device. The valid range for this parameter is 1-300 seconds.
Device Family	The family of devices to which the device belongs.

Field	Description
Duplex Mode	The state of communication of the selected port, ports, or ports on the selected LAG. Possible values are: • **Full Duplex** - The port can send and receive simultaneously. • **Half Duplex** - The port can either receive or send, but can not do both simultaneously.
Expansion CS	The version of the expansion module. The version is updated whenever there is a functional modification to the module.
Expansion Description	A description of the expansion module in the selected module.
Expansion Type	The type of expansion module in the selected module.
Fault Messages	A list of fault messages.
Filtering Mode	The mode of operation of the IP Multicast Filtering on the device. Possible Modes are: • **Enable** - IP Multicast Filtering is enabled on the device. • **Disable** - IP Multicast Filtering in not enabled on the device.
Flow Control Advertisement	The flow control values advertised by the selected port or ports on the selected LAG. These values limit the flow control possibilities to be decided by Auto-Negotiation.
Flow Control Mode	The state of flow control on the selected port, ports, or ports on the selected LAG.
Host Aging Time	The amount of time (in seconds) allowed to pass from a host's last IP Multicast request before the device stops forwarding a multicast session to a host. The valid range for this parameter is 30-1800 seconds.

Field	Description
IEEE-802.1D STP Mode	The state of Spanning Tree Protocol. Possible states are: • **Disable** - STP is disabled. This is the default state. • **Enable** - STP is enabled. When activating STP, keep in mind that: • All bridges should run STP. • Redundancy applications and STP cannot co-exist. For more information refer to *Spanning Tree Algorithm (STA)* in *The Reference Guide*.
IEEE-802.1D STP Priority	The priority of the bridge as determined by the first quarter of the Bridge ID.
Intermodule	A port redundancy service that operates even when the primary port link fails.
IP Address	The IP address of the device, manager, agent, or neighbor device.
LAG Functionality	The physical media type of the ports of the selected LAG. If the port conforms to a certain standard (Repeater, Transceiver, 10BaseT, etc.), this standard is displayed. If the port does not conform to any standard, Private is displayed.
LAG Name	The name of the selected LAG.
LAG Type	The type of LAG.
LAG Name	In Port Configuration: The name of the LAG of which the port is a member. If the port is not a member of a LAG, the Link Aggregation Name is **not in LAG**. In LAG Configuration: The name of the LAG.
MAC Address	The MAC address of the device, agent, or ring interface.
Management VLAN ID	The VLAN ID (VLAN #) of the agent.
Module Description	A description of the module type.
Module ID	The slot number is the position in which the module is located. There can be up to 10 modules in a device.
Module Type	The module type.
Number of Modules	The number of modules currently in the device.

Field	Description
Number of Ports	The number of ports located on the module.
Operational Status	The warning level of the selected port, ports, or ports on a selected LAG. Possible values are: • **OK** • **Warning** • **Fatal**
Physical Location	The current physical location of the device.
Port Classification	The classification of a specific port. Port Classification allows network managers to specify each port level's importance. The possible states are: • **Regular** - Normal users. • **Valuable** - Servers or critical users. For more information refer to *Port Classification* in *The Reference Guide*.
Port Functionality	The physical media type of the selected port or ports of the selected LAG. If the port conforms to a certain standard (Repeater, Transceiver, 10BaseT, etc.), this standard is displayed. If the port does not conform to any standard, Private is displayed.
Port Name	The user can define a logical name to the port for ease of use.
Port Priority Level	The priority level of packets exiting the port or ports on the module. For effective transmission, multimedia packets must be received isochronously (at regular intervals). To ensure this, you can assign priorities to packets coming out of a port. Whenever traffic load is extreme and a port cannot accept all incoming packets, packets sent from a port with the highest priority will pass through first. However, a fairness mechanism will allow low priority packets to eventually enter the bus. Possible values are: • **Regular** • **High**

Field	Description
Port STP Mode	Enables Port Spanning Tree. The Spanning Tree mode creates a logical tree topology out of any arrangement of bridges, resulting in a single path between any two end stations. The Spanning Tree Mode also provides high fault tolerance. The possible states are: • **Enable** - Enables the Spanning Tree Mode. • **Disable** - Disables the Spanning Tree Mode. For more information refer to *Spanning Tree Algorithm (STA)* in *The Reference Guide*.
Port STP State	The state of the port in terms of the Spanning Tree Protocol. The possible states are: • **Disable** - The port is disabled. • **Blocking** - STP is enabled and currently blocking the port. The port is effectively disabled to prevent the formation of a loop in the network. • **Forwarding** - The port is currently forwarding information received.
Propagate Status	The state of status propagation on the port or module. When enabled, the status of a port or module is passed up one level. For example, when the Propagate Status field of a problematic port is enabled, the port's icon as well as the module that the port is located on appears red. If Propagate Status is disabled, only the port icon appears red. The following colors indicate the status of the port or module: • **Red** - Fatal • **Grey** - Disabled (port only) • **Yellow** - Warning • **Green** - Okay By default, status propagation is enabled for all ports and modules.
Router Aging Time	The amount of time (in seconds) allowed to pass from a router's last IP Multicast request before the device stops forwarding all multicast sessions to a router. The valid range for this parameter is 30 - 7200 seconds.
Serial Number	A unique number assigned by Avaya Inc. to the selected hardware.

Field	Description
Software Version	The version of the application software running on the module.
Speed Mode	The speed of communication of the selected port, ports, or ports on the selected LAG. Possible values are: • **Ethernet** - 10 Mbps. • **Fast Ethernet** - 100 Mbps. • **Gigabit Ethernet** - 1000 Mbps.
STP Path Cost	A cost factor used by Spanning Tree Algorithm to determine the most efficient route for forwarding traffic to its destination while removing loops in the network. For more information refer to *Spanning Tree Algorithm (STA)* in *The Reference Guide*.
System Description	A description of the type of system being used.
System Name	Logical name of the system as defined on the SNMP agent of the device.
Tagging Mode	The port's or LAG's operation mode regarding VLANs. The possible modes are: • **Clear** - Transmits each outgoing packet in untagged format if it belongs to the port's VLAN. Otherwise, it discards the packet. • **IEEE-802.1Q** - VLAN tagging, per IEEE 802.1Q VLAN standard. The port will transmit frames with a VLAN ID of 1 - 3071.
VLAN ID	The VLAN number of the port or LAG.

D Traffic Types

Field	Description
Collisions	Total number of Ethernet collisions in which the port was involved.
CRC Errors	Total number of Ethernet packets received at this port with FCS error and Framing error. This indicates the number of corrupted packets received.
Fragments	Total number of Ethernet packets received at this port whose octet count is less than the minimum standard packet length.
Frames Too Long	Total number of Ethernet packets received at this port whose octet count is more than the maximum standard packet length.
Jabber	Total number of Ethernet packets received at this port that are too long and include CRC errors.
Non-Unicast	Total number of good packets directed to non-unicast addresses that were received on the port.
TotalPackets Received	Total number of packets of valid frame length that were received on the port.
Unicast	Total number of good packets received that were directed to a unicast address.

E Trap Fields

Field	Description
Configuration Changed Traps	A group of traps which report a change in the configuration of the device.
Duplicate IP Traps	A trap which reports that a user has configures a device on the network with an IP address that is already being used by the router.
Fan Traps	The trap reports the failure of a fan.
Fault Traps	A group of traps which report a fault in the device.
IP Access Control Traps	A trap which reports the arrival to the router of a packet which is assigned not to enter the router.
IP Vlan Violation Traps	The trap reports the reception of a packet tagged with a VLAN ID not equal to the IP interface of the router.
Module Insert Remove Traps	The trap reports the insertion or removal of a module in the device.
Power Supply Traps	The trap reports the failure of a PSU.
Trap Enable	Enables trap reporting for the selected manager.

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